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The Builder

INCORPORATING ARCHITECTURE & THE BRITISH ARCHITECT

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Leading Articles

'Your Fortune in a Tea-Cup'

MORE IS AT STAKE behind the tea-breaks dispute than whether a million and a half building operatives succeed in their by no means general endeavours to perpetuate the bad custom by which, being paid on an hourly rate, they take tea morning and afternoon in their employers' time. The prize is nothing less than the future of industrial negotiations, and all concerned—masters and men alike—will do well to realise it.

The climate in which, in recent years, these negotiations have been conducted has been propitious; it has given rise to hopes that the tug-of-war which has traditionally epitomised so much of the debate between the employers' and the operatives' interests on the National Joint Council had been abandoned in favour of a common endeavour based on realisation that these several interests are, in fact, one—a stable building industry in full employment.

What has soured the aftermath of the apparently successful meeting of the National Joint Council at which agreement was reached to add 6d. to the hourly rate and reduce working hours to 42 weekly, is not easy to see. But the employers are in no doubt that, in return for a concession which puts an extra guinea into every operative's weekly pay packet, it was agreed that as from October 2 the bad, wartime practice by which tea-breaks are taken in the employers' time should cease and that these breaks should be taken out of the dinner hour or, if individual sites preferred it, accounted for by extra time at the end of the day. The employers undoubtedly had a case here, for the morning and afternoon breaks have, in too many instances, got out of hand and have interfered with site discipline and job efficiency.

Union instructions in certain areas to resist the employers' decision to operate the new arrangement are, we believe, as unwise in their own members' interests as they are inequitable. In this context time is not money, for the men are not being asked to make any financial sacrifice. But in the national sense, paid tea-breaks do represent money, for the effect on building costs (to say nothing of building productivity) of 6d. an hour and a shorter working week are such that less building will be put in hand. The effect on building prices since the increase was first announced has been, as our Cost of Building Chart shows, to lift the index by 29 points from the figure of 384 in February last to 413 points at the beginning of October. If additional evidence were required, it can be found in the statistics of work commissioned of architects in the second quarter of the year, which has dropped by 10 per cent over the volume of work commissioned in the first quarter.

This should be warning enough, but equally serious is the fear that the future course of industrial negotiations may well be gravely affected if the verbal agreement made between the two sides on the NJC is not honoured. We shall expect that employers will stand firm behind their negotiators and that the operatives will take the sensible course of appreciating where their own best interests lie. Both sides can most usefully help by co-operating in devising quick and efficient service of tea on sites.

'A Policy for Town and Country Planning'

IF OUR FORMIDABLE town and country planning problems go unsolved it will not be for want of exhortation and advice. Criticisms of current policy and proposals for reform pour out in an almost unceasing flood. Notable among the more recent of these is a report entitled 'The Face of Britain; a Policy for Town and Country Planning,'* the work of a group of architects, town planners, economists, sociologists and administrators, who had been invited by 'Socialist Commentary' to pool their ideas on the subject. Some extracts from this were given last week.

In view of its provenance, subtle political propaganda will no doubt be suspected, but that should not deter an impartial consideration of its criticisms and recommendations. Few are likely to disagree with the general outline it gives of the present position nor with the need for vigorous constructive action if the trouble for which we appear to be heading, especially upon the roads, is to be avoided. It is the methods suggested for adoption that will arouse controversy and, in some cases no doubt, acute opposition. The basic and most controversial proposal is that 'subject to conditions and safeguards,' the nation should acquire the freehold interest in all land.

This idea is worked out in considerable detail. 'Our proposals,' write the authors, 'can indeed be described as "nationalisation." They do, undoubtedly, severely limit the "rights" of property owners to collect unearned values at the expense of the community, or to distort the course of development in the interest of private profit.' Everyone owning land, including the humble citizen in his semi-detached, would be affected by this radical proposal, which is hardly likely to be acceptable in the present state of public opinion; nor could legislation be contemplated without a mandate from the country.

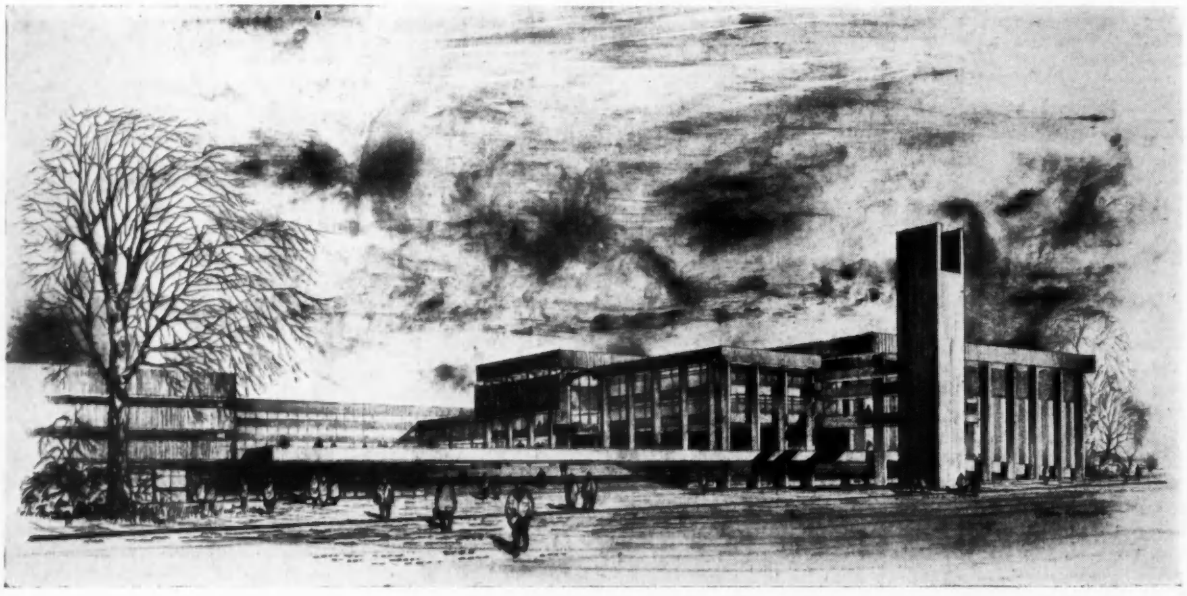
Little less controversial is the proposal to set up a giant Ministry of Town and Country Planning to have supreme control over planning for location of employment, for house building, for communications, and the integration of traffic planning with land use planning and town design, but with devolution of regional planning powers to Regional Planning Authorities (rather a weak concession, this, to local 'amour propre'). A National Development Corporation is also proposed, to be organised on the lines of the present New Towns Corporations. Responsible to the MoT and CP and accountable to Parliament, it would build houses, either for leasehold sale or for rent; offer its resources to local authorities unable to plan development for themselves, to commercial organisations wishing to invest in housing, and to co-operative housing organisations.

The private developer comes in for some hard knocks; he 'concentrates on the prosperous towns and areas, but ignores the declining industrial towns or the back streets'; while private builders are said to have 'failed almost totally to provide well-designed houses, well built with high standards of space, insulation, finish, equipment and materials in well laid out schemes at reasonable cost.' The answer to the first charge is another question: Is it reasonable to expect commercial undertakings to lose money in unprofitable work? The answer to the second is that it is untrue of a large section of the housebuilding industry, while in low-cost housing there has been a considerable improvement of standards in recent years.

The rôle of the private builder and developer in this proposed Utopia is not clear, but one has the feeling that the outlook would be far from rosy. It is a pity that this report, into which a lot of thought and effort has obviously been put, should be so prejudiced and one-sided. The threat of nationalisation (the sponsors candidly admit that 'the whole plan hinges on the land problem') is enough to quench the interest of many who are eager for reform.

* 11 Great Russell Street, London, WC1. Price 1s. 6d.

LINCOLN CIVIC CENTRE COMPETITION.—*A perspective of the design submitted by Andrew Renton, Peter Howard, John Kennett & Gerald Levin, which was placed equal second. The premiated designs were illustrated in our last issue*



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Notes of the Week

Party Perversity at Nottingham ; Art in Architecture ; SPAB Reports; Austerity in the Doll's House ; Pottery

THE DEGREE OF BITTERNESS between the two major political parties is emphasised by the shameful petty quibbling that has been going on at Nottingham over the scheme for a civic repertory theatre. It will be remembered that the project was originally passed when, before the municipal elections, the Socialist mayor had the casting vote, the thirty-two Socialists on the council voting for the scheme and the thirty-one Conservatives with the single Liberal member voting against. This was a motion passed in the tradition of democratic government, but the elections of May this year resulted in a majority for the Conservatives who kept their promise to abandon the theatre scheme. One of the reasons for the opposition, it was stated, was on the grounds that 'the stage was capable of perpetrating some rather adverse political propaganda ! '

* * *

AT NOTTINGHAM, and indeed in other areas, schemes put forward by the party in power are often, as a matter of policy, automatically opposed by its opposite numbers. Construction of the Nottingham theatre has now reached first-floor level and it now looks like being scrapped simply because commonsense has not prevailed. Is it not possible for councils sensibly to compromise over such matters ? It is an appalling state of affairs when grown men with children and grey hairs continue to run a city on party political lines. It is to be hoped that the Nottingham theatre will go ahead as originally planned, or at very least with some curtailment; but we can only wait and see what the city fathers in their collective wisdom decide. Voltaire was quite right—' commonsense is not so common.'

Art in Architecture

A FORTHRIGHT leading article in the second issue of ' Number,' a new journal being produced bi-monthly by a group of young writers, designers and artists, asks the question, ' Is a Public Art Possible? ' The avowed object of this journal is to defend and reinstate art, but at the same time not to attack science or technology with which it appears to be in sympathy. In the leading article Ken Baynes, the ' publishing editor,' points out, quite rightly, that public art is in a worse state than it has ever been, save perhaps during the Victorian period. At the present time the visual arts—sculpture, mosaic, stained glass, fresco and tapestry—are beginning once again to assert themselves after the long barren period complained of. Newer mediums, depending on such recently developed materials as plastics and ciment fondu, are giving added impetus to the artist who wants to bring his work into a closer relationship with architecture. The latter has always been regarded as a ' key art ' or ' mother art,' the source and context around which all the other visual arts could group themselves.

* * *

THE YOUNG ARTISTS, writers and designers who contribute to ' Number,' consider that as a result of specialist education there is an almost complete unawareness on the part of the architect, artist and patron of each other's potentialities. They call for more common understanding to clear the way for fruitful collaboration. Their plea for a better understanding between artists and architects is made in the belief that one of the most important obstacles in the way of art in architecture is a confusion, on the part of the architect, as to the nature of the artist's function. ' A painter or or sculptor, working on a public commission,' says Steve Cohn, ' has difficulties enough without the added one of an unsympathetic architect.' This lively journal is published from 1 Jedburgh-street, London, SW11.

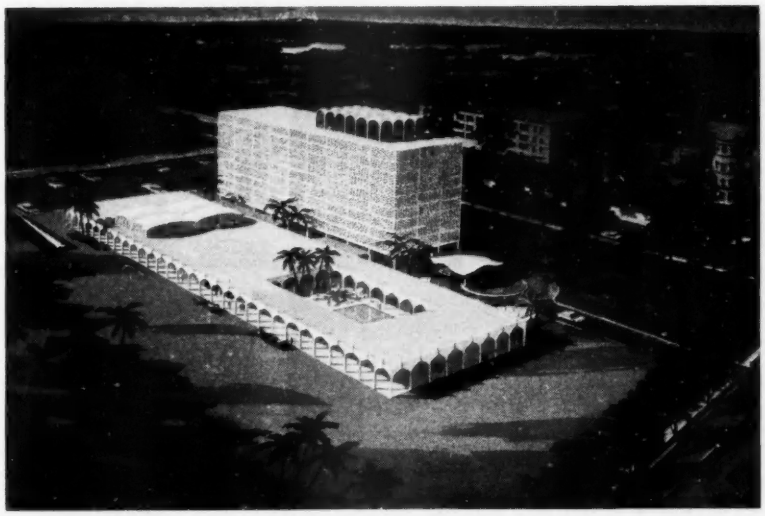
SPAB Reports

THE REPORT of the Society for the Protection of Ancient Buildings for the eighty-first to the eighty-third years (1958-1960) contains a wealth of interesting reading matter and illustrations. Notable among its features are a reproduction of the portrait of Lord Esher (painted by H. Andrew Freeth, ARA), commissioned to mark the twenty-fifth anniversary of his chairmanship of the Society, and a reproduction of the members' signed address to him on his resignation, in May, 1960, with his charming acknowledgment of this. Following is an account of the Garden Party held at Fulham Palace in honour of Lord Esher in July last year, with a report of the agreeable speeches there made by Sir John Summerson, by his lordship in reply, and by Lord Euston, who is the new chairman. Lord Esher now fills the office of Life President, specially created to mark the members' appreciation of his work.

The report, which runs to over 200 pages, is a full record of the Society's proceedings and its work on behalf of ancient buildings. About seven hundred cases are listed in which the Society has taken action over the three years, either at the request of owners or guardians or through attention brought to them by members or others or through the Press. Interesting details of many of these are given, and it would be nice to be able to record that the Society's representations had been invariably successful. Alas that it should not be so. The picture that emerges is one of light and shade; notwithstanding all the efforts that are made far too many of our delightful old buildings continue to disappear or to suffer the threat of demolition. Some twenty-four pages of beautifully reproduced photographs show a number of fine things that have been lost or are currently threatened as well as others that through the action of the Society have fortunately been saved.

* * *

THE NEED for an alert, authoritative body to watch over and advise on our inheritance of beautiful or historic buildings was never greater than it is today. All who approve and are able to support the work of the Society should become members. The annual subscription is only a guinea (though more will be gratefully accepted), and a proposal form is included at the end of this report, which is published at the office of the SPAB at 55 Great Ormond-street, Queen-square, London, WC1.



THE KARACHI INTERCONTINENTAL HOTEL, *to cost 7m. dollars, on which work has started. The hotel is one of six being built by Pakistan Services Ltd. The architects are William Tabler & Co., of New York*

Austerity in the Doll's House

PAUL AND MARJORIE ABBATT'S toy shop in Wimpole-street, W, contains all the ingredients of fantasy and make-believe that children should never be deprived of. There is, however, a recent addition to their collection which, though well-designed, is destined finally to remove the gilt from the gingerbread. It is a doll's house, designed by Anne Swain and Michael Brownson, which could quite easily be a model for carefully worked out urban housing—neatly documented, multi-cellular spaces in which each room is based upon a module giving maximum requirements for health and sanity, the whole being constructed of standard parts wiped clean of every vestige of opulence and ornament. Surely the young children who are expected to play with this Draculean skeleton would be better served with something, if not more elegant, at least a little more ornamental and elaborate? A more contemporary style need not, however, be without fantasy and charm. This was shown only last year when the 'House of Many Waters,' built by architectural student Colin Franklin to a design by Ian Marshall, was shown at the RBA Galleries in Suffolk-street. Such examples are very elaborate and very expensive, but it cannot be beyond the ingenuity of the toy designers to think up something cheaper.

Pottery

AN INTERESTING EXHIBITION at the Crafts Centre (it closed yesterday) was of stoneware pottery by Michael Casson and Victor Margerie, writes BASIL MARRIOTT. Both are currently teaching at Harrow School of Art and also practising what they teach, Margrie with a smaller output which does not run to repetitive or 'mass' production. This may be a good thing: though not suggesting 'suspension for throwing' (to borrow from current cricket vernacular) I sometimes wonder whether the remarkable revival in pottery is leading to some over-production. Apart from what happens to pots—'buttons, visiting-cards and shrivelled windfalls' was a potter's own cynical answer recently—their massed sherds will set future archaeologists some pretty puzzles, since some seem hardly congenial, stylistically or otherwise, to the rest of the contemporary scene—swinging in that direction though it admittedly is.

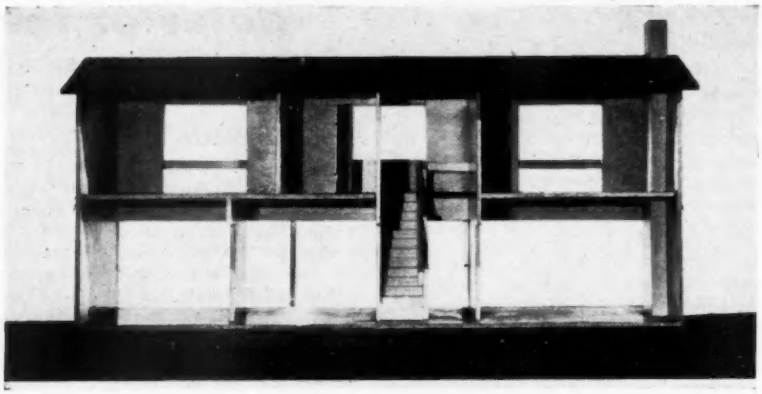
This criticism does not, however, apply to either Casson or Margrie. The former I thought at his best in undecorated ware, or at most with incised or other annular ornament, to a large scale. The latter seemed perhaps more conscious of the current trends in furniture with which his work will go—examples were his elegant, small single-flower vases. But both are masters of glazes, and show some fine pieces.

Poet's Corner

HOUSES and flats are to be built on part of Hurst Park Racecourse.

Dejectedly we doff the hat
For the loss of open space,
Yet when the 'flat' is house and flat
How many will get a 'place'!

ANON.



Letters to the Editor

High Buildings or Low?; Post-war Schools

SIR,—I perused my copy of your excellent newspaper (and, incidentally, it is more excellent than it was a few years ago when there seemed to be only one man in the 'team,' i.e. the architect) and noticed that your tame poet has aired a controversy over high and low buildings.

The question of mensuration is not nearly so important as one of numbers. How many people are to be accommodated on a given area of land during the day and on another area during the night? My answer would be:

BUILDING high or building low,
Does the public really know?
It is really hard to judge
Elevations are so much fudge.

On my morning train I'm beat
By my neighbour, for a seat.
What I need to keep up my pecker
Is all the trains made double decker.

I care not whether low or high,
What really makes me heave a sigh
And daily causes me much bother
Is how to get from one to t'other!

D. E. PHILLIPS,
12 Upland Park-road, Oxford.

Post-war Schools

SIR,—In your leading article of September 8 you commented, "these large areas of window glass may well involve a risk of glare or eyestrain but it seems unduly pessimistic to suspect heat exhaustion due to direct sunlight through the glass during a normal English summer,' and suggested that the point be settled by scientific investigation once and for all.

Scientific investigation may be needed to define a normal English summer, but not to establish that some of our post-war schools incorporate excessive areas of glazing. My authority for this is the experience of some of those who try to work and teach in them. I know of schools where classroom temperatures recorded over a long period passed 100 deg. in winter and reached 126 deg. in summer and it often became necessary to move the children into the playground to teach them at all. This may explain why some of the youth of today are so hard-boiled!

In 1937 I spent a happy day in Hilversum looking at Dudok's schools which had a profound bearing on much that has followed since. I formed a lasting impression of the humanity of some of his designs. The cream of our post-war schools are no doubt better planned, exquisitely landscaped and thoroughly delightful, but far too many appear to be matter-of-fact citizen factories—and not always functional at that. Teachers have shown me blackboards at wrong heights, hot-air intakes directed straight towards the only opening sections of windows that are so large that only half the classroom is bearable in the afternoon, etc. Some schools appear unduly lavish whilst others (including some that are much-publicised) appear likely to offset low initial costs by excessive maintenance (a matter to which I see you allude in your issue of September 29).

I am prompted to offer these remarks only because it would be a pity if justifiable pride in our new schools were to be allowed to lapse into complacency.

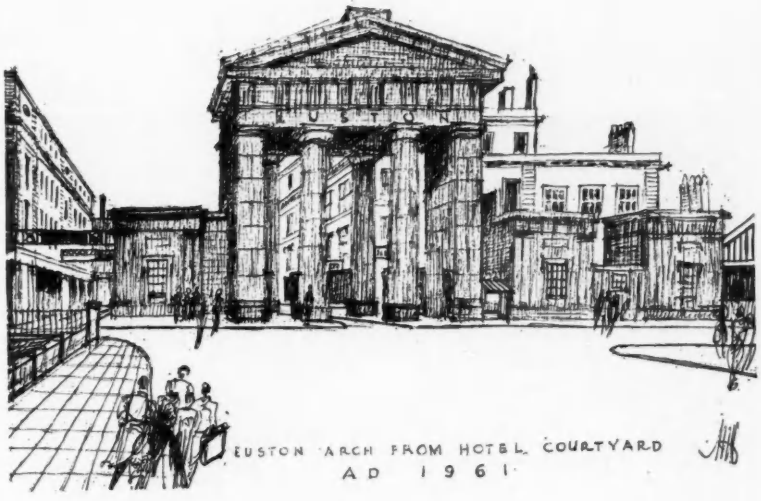
H. S. HOWGRAVE-GRAHAM [ARIBA],
105 Three Bridges-road, Crawley.

'With fraternal good wishes for longer and happier tea breaks!'

Euston Requeim

ALAS! POOR EUSTON. The strife is o'er, the battle done. The hard head of the Minister of Transport has won the day and the soft hearts of the preservationists must suffer their bereavement.

Whilst the battle raged, I took myself quietly up Euston-road one day to make my own act of contemplation. I walked up the long station approach from Euston-road, but not until you reach the hotel does the grand triumphal arch come into view, and even then it is not sited axially with the hotel. It would seem that it only enjoyed the setting which its monumental proportions required for the first ten years or so of its life after it was first built in 1837; by 1850 buildings were erected to the south which completely destroyed the vista. Only the most ardent sentimentalist could really want to preserve its black Doric enormity in its present incongruous position.

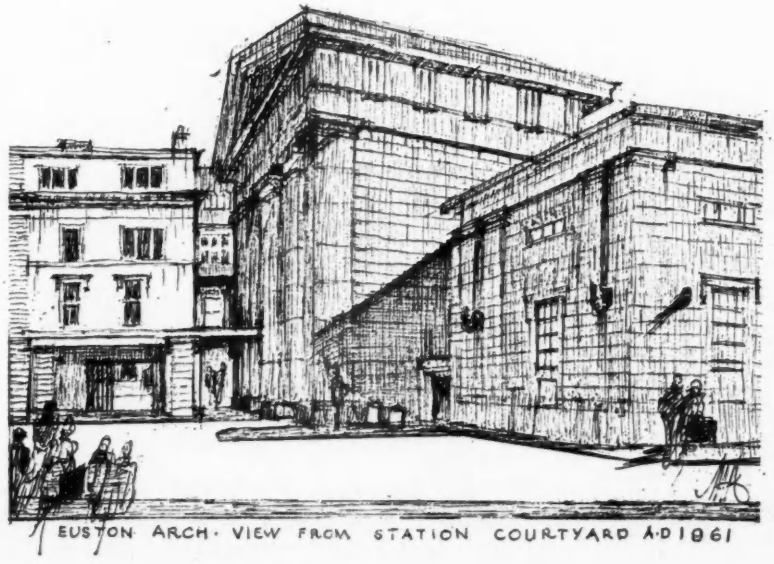


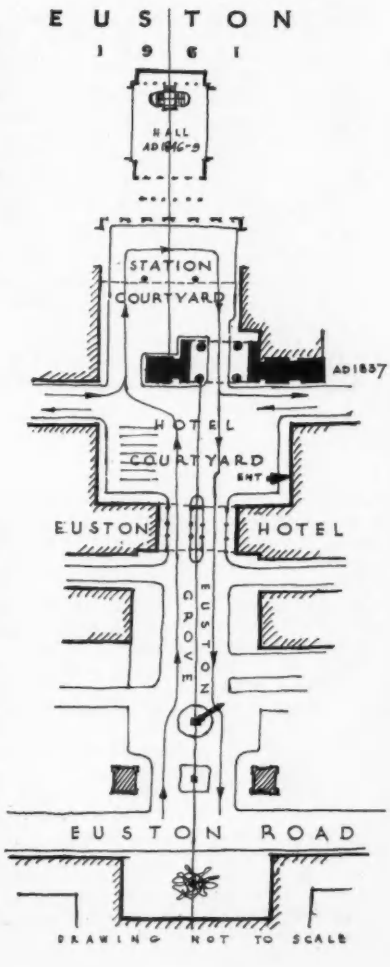
EUSTON ARCH FROM HOTEL COURTYARD AD 1961

Yet, no architect of any sensitivity, least of all an erstwhile Northerner, could feel unaffected by the loss. I thought of Hardwick and in my mood of reverie fancied he might have been ready with the rest of us to sacrifice his outmoded monument if he could see the architectural jungle which was now its home.

But I could not let it go at that. I know of only one way of paying my personal tribute to a building, so I took out my sketch book and drew what I saw before me. Only by drawing a building can I really discover what is there and enter into the mind of the architect who conceived it. I made my sketches, knowing that it would probably never be sketched again. But I did not mourn. Its day is over and I did not feel that it has a permanent place in our building heritage. A reverent obituary would suffice.

ARTHUR W. KENYON.

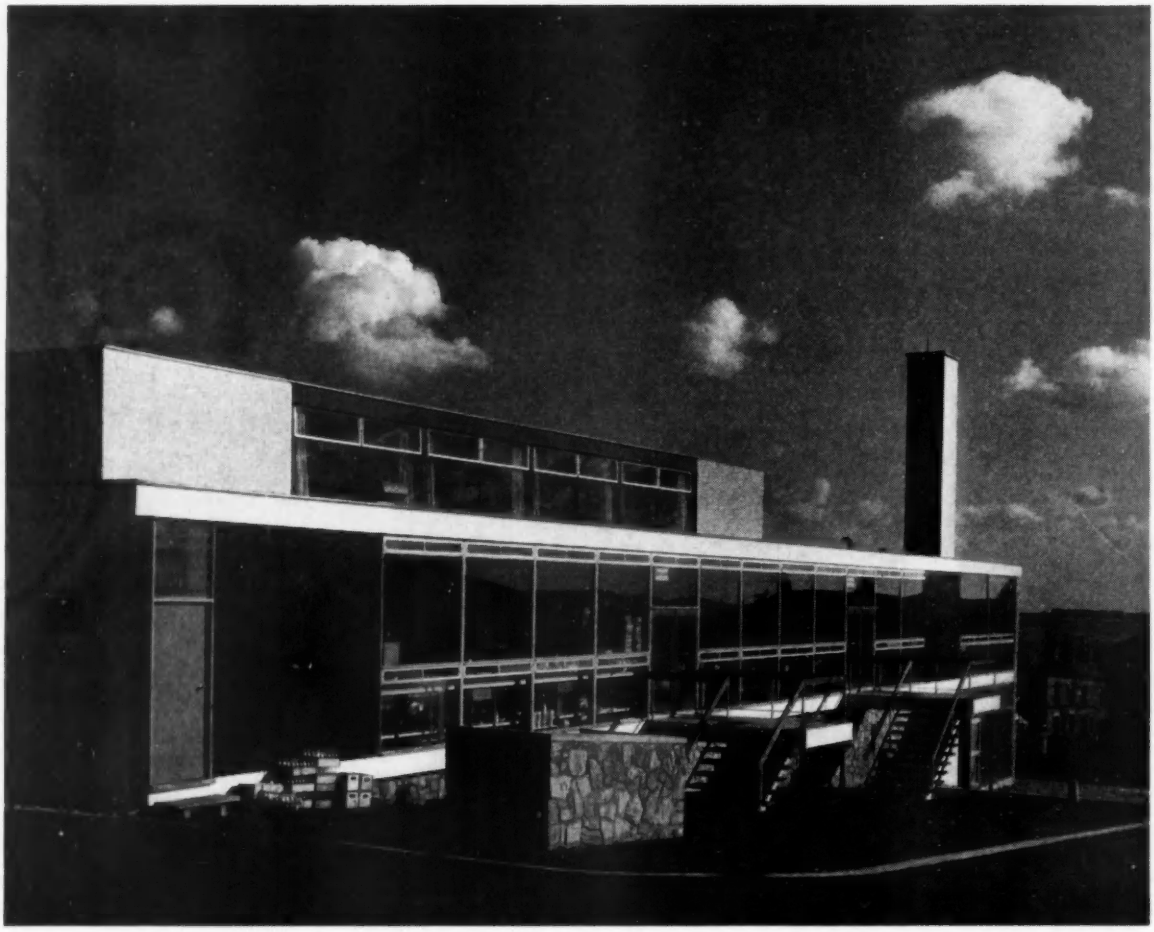

EUSTON ARCH · VIEW FROM STATION COURTYARD A·D 1961



College of Further Education, Horwich

For Lancashire County Council

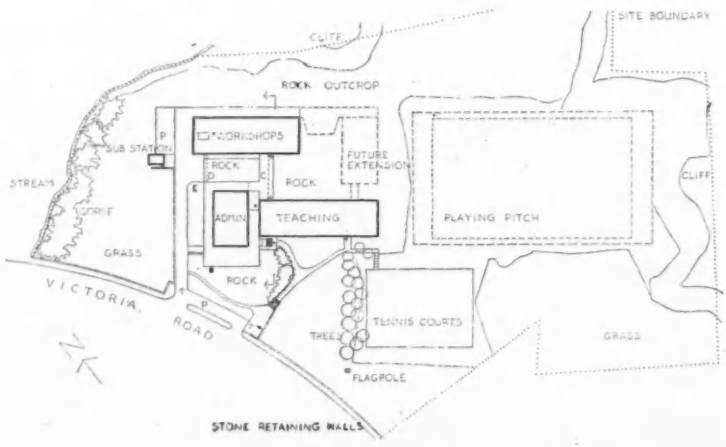
C. H. SIMMONS, ARIBA, county architect
R. J. BARTON & SONS LTD., general contractors

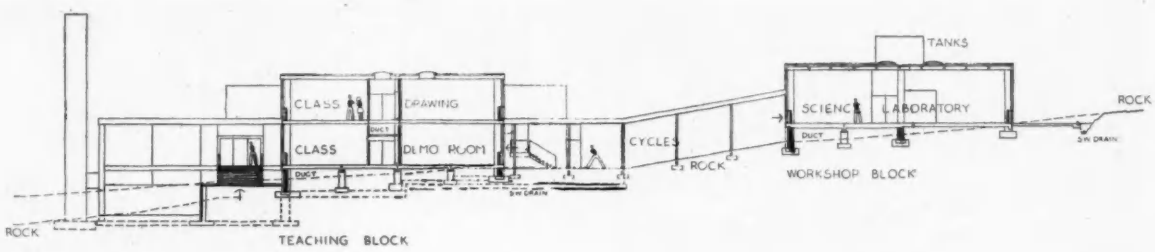


dining hall block, from north

HORWICH COLLEGE was designed to cater for engineering, building, commerce and a wide range of non-vocational courses reaching O.N.C. and final C. & G. levels. The catchment area includes Horwich, Blackrod, and Chorley. In addition the college is intended to act as a focal point for the community activities of the district and provision is made in the design for the main hall to be self-contained for this purpose. It is an interesting point that the Principal of the college was an active member of the design team and this proved invaluable in the analysis of the problem.

The site of 10 acres is exposed, having open views and sloping steeply to the south, dropping a total of 86 ft. Formerly the site was a brick works, and consisted largely of bare shale rock. An attempt has been made to extract the maximum





SITE SECTION

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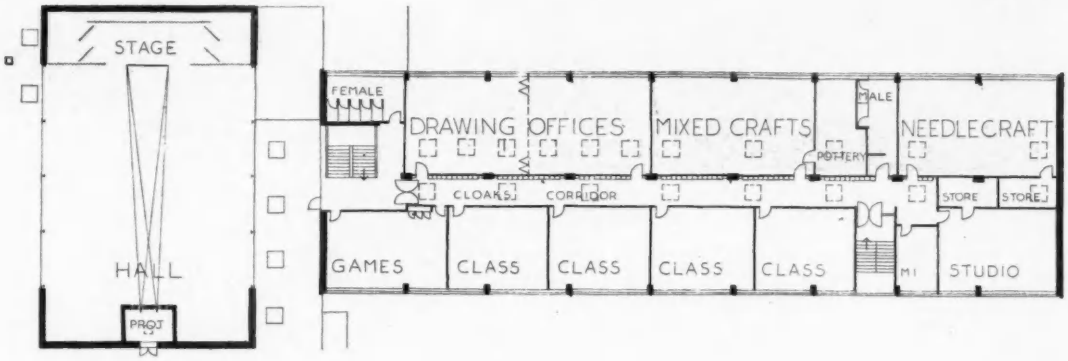
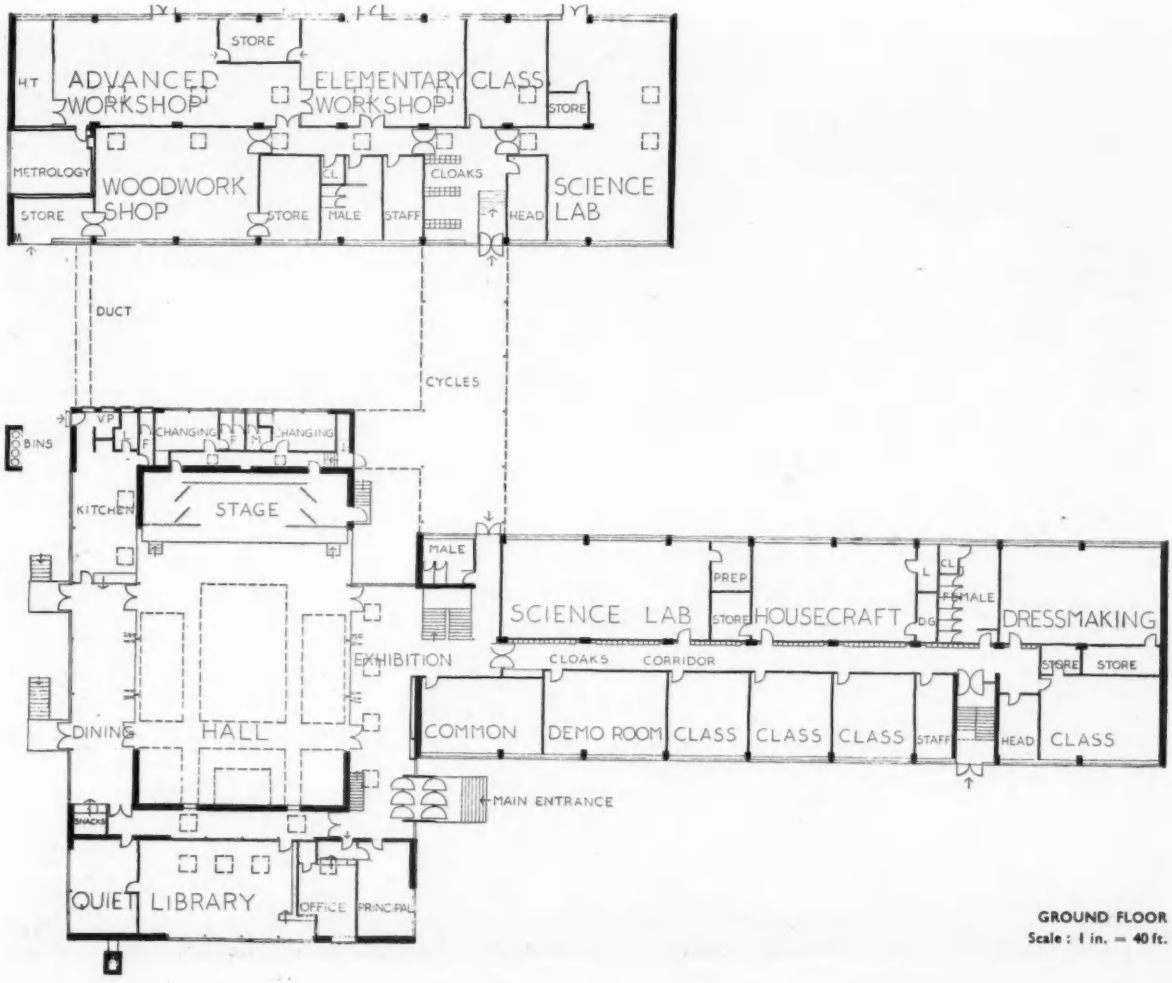
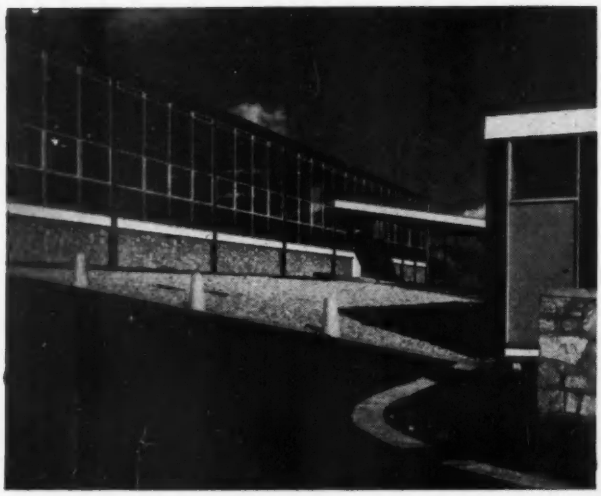
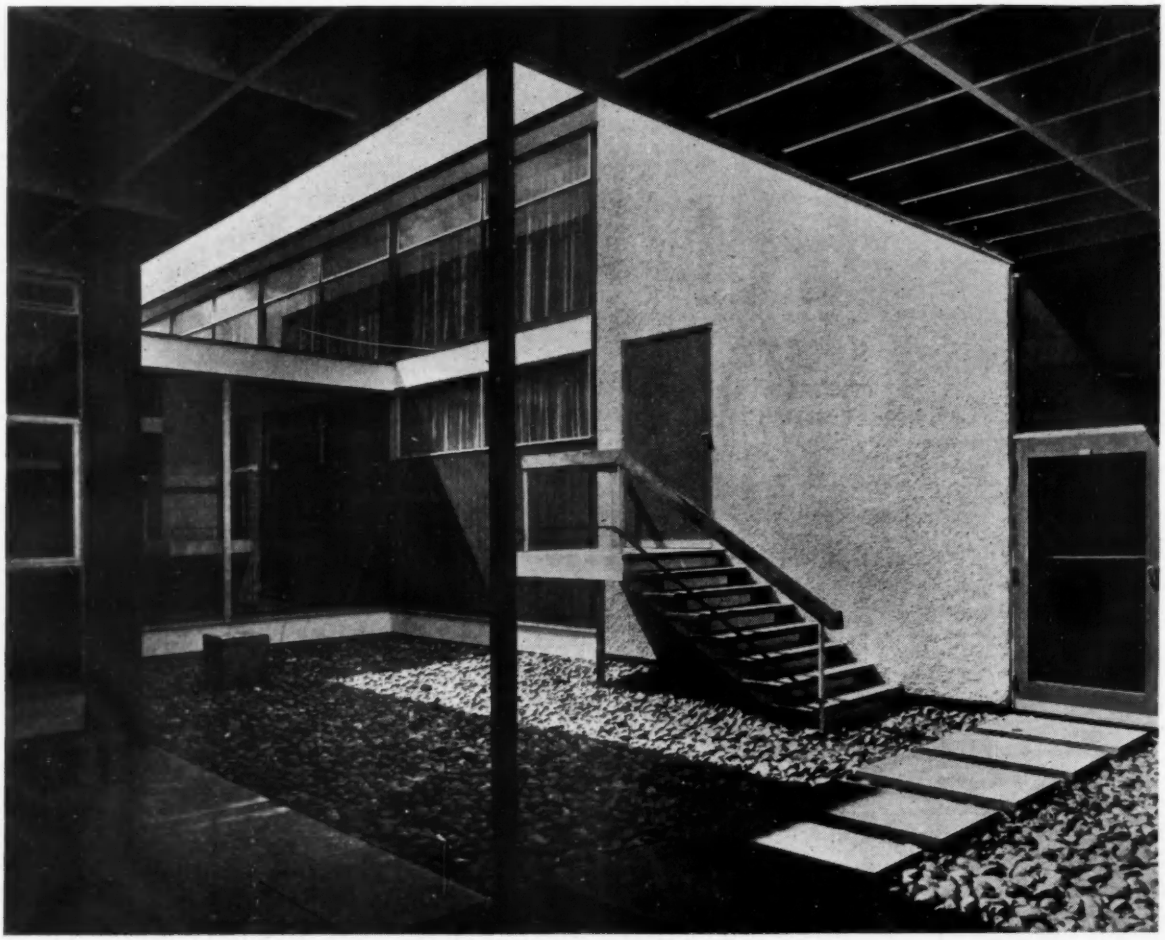


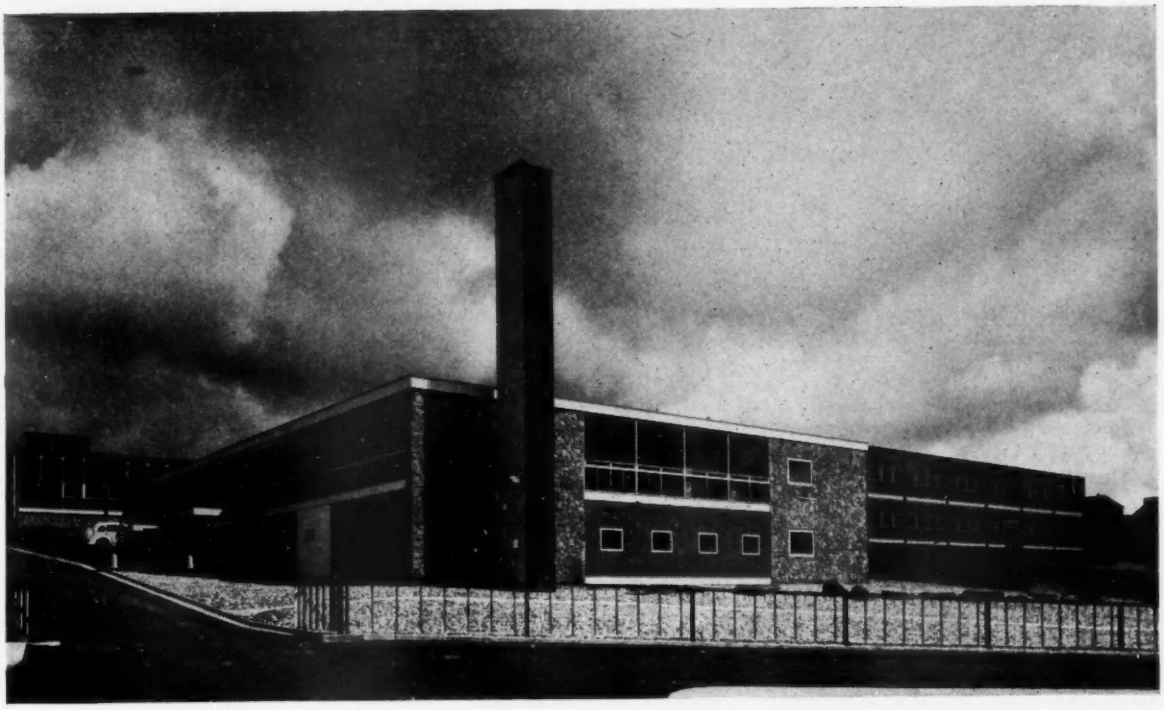


GROUND FLOOR
Scale : 1 in. = 40 ft.



Above, workshop block linked to main building by a covered cycle park. Right, teaching block and main entrance steps, foreground. Below, internal court towards exhibition hall and stage wing exit

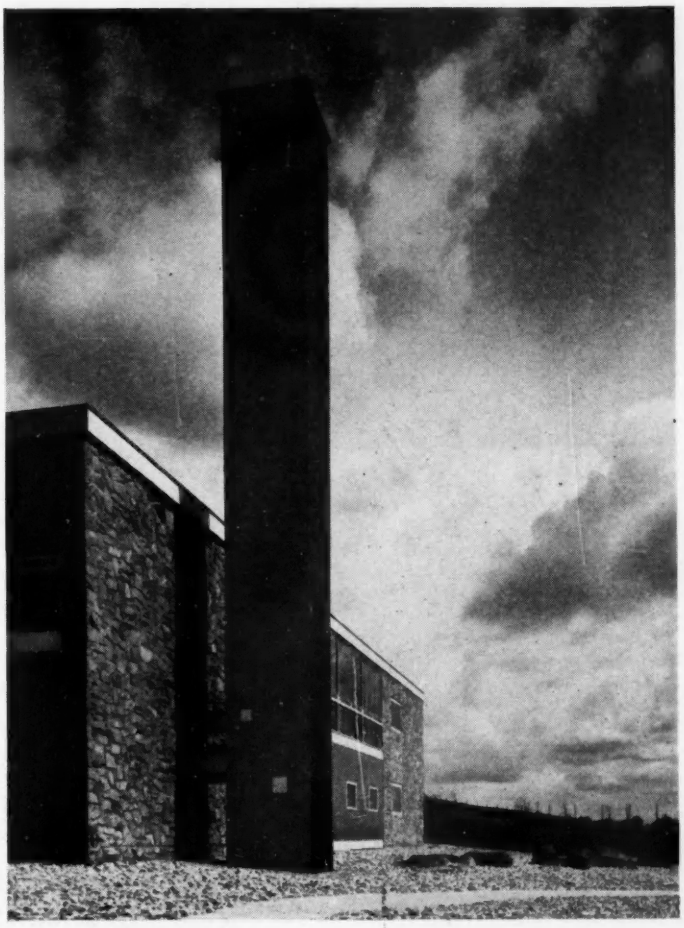




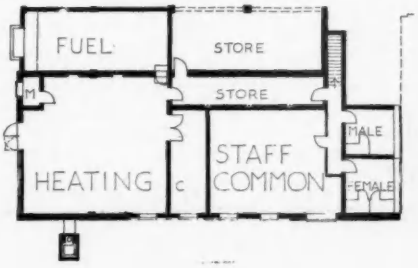
view from main gate and (below) boiler house stack

value from this uncompromising situation by the development of the site as a natural and informal part of the hillside. For example, informal planting includes the use of gorse, heather and hillside grass on parts of the surface rock. It was hoped originally to use the stone excavated from any foundations in the rubble walls of the main blocks, but it was found that the stone once exposed to the open air tended to disintegrate. The use of any large areas of grass was not economical or feasible on top of the surface rock, and the character of the site has been in a sense re-captured by the extensive use of large loose gravel in conjunction with the outcrop rock. This has also solved one of the most intractable problems in the project—that of site drainage. In principle everything is so designed that the surface water drains through the large loose gravel to the surface rock, and thus down the natural slope of the rock to a series of land drains.

The accommodation consists basically of three main elements, the Teaching and the Workshop blocks centred around the Hall, Dining and Administrative area which forms the self-contained unit previously mentioned for cultural activities. This is clearly expressed in the building with the three main blocks connected at low level by link accommodation, etc., and all stepped down with the natural contours of the site toward Victoria-road. Full use was made of



LOWER GROUND FLOOR



library corridor

dining hall

principal's room

laboratory

COST ANALYSIS

Tender Date February 15, 1958	Starting Date April 28, 1958	Completion Date January 27, 1961		Cost Per Place £348 4s. 5d.	
Lowest Tender £171,037	Highest Tender £185,652	Anticipated Final Account £159,833		Feet Super 40,900	Feet Cube 753,225
		Cost £	%	Per F.S. s. d.	Per F.C. s. d.
Piling		—	—	—	—
Other work below lowest floor		10,570	6·62	5 2	0 3½
Remaining work below Ground Floor, comprising: Heating Chamber and Fuel Store, Staff Common Room, Meter Room, Male and Female Toilets, Maintenance Room, Chair Store		4,083	2·55	2 0	0 1½
Sub-structure Total		14,653	9·17	7 2	0 5
Steel Frame		2,110	1·32	1 0½	0 0½
Metal Windows and Timber Sub-frames		7,905	4·95	3 10½	0 2½
Glazing		3,727	2·33	1 10	0 1
Roof construction and covering and external plumbing		12,461	7·80	6 1	0 4
Upper floors		2,757	1·72	1 4	0 1
Walls and steel beams		13,422	8·40	6 7	0 4½
Structures Total		42,382	26·52	20 9	1 1½
		Cost £	%	Per F.S. s. d.	Per F.C. s. d.
Partitions		2,212	1·38	1 1	0 0½
Joinery and special fittings		2,006	1·26	1 0	0 0½
Ironmongery		2,026	1·27	1 0	0 0½
Balustrades		684	0·43	0 4	—
Floor Finishings		9,958	6·23	4 10½	0 3½
Wall and Ceiling Finishings		5,883	3·68	2 10	0 2
Staircases		1,893	1·18	0 11½	0 0½
Decorations		4,505	2·82	2 2½	0 1½
Finishings Total		29,167	18·25	14 3½	0 9
Sanitary Plumbing		3,237	2·03	1 7	0 1
Hot Water Installation		2,246	1·41	1 1	0 0½
Heating Installation (Oil-fired, low-pressure system)		11,655	7·29	5 8½	0 4
Gas Installation (Kitchen, Housecraft, Workshop)		1,010	0·63	0 6	0 0½
Electrical Installation		7,541	4·72	3 8	0 2½
Electrical Fittings		2,153	1·35	1 0½	0 0½
Ventilation (Extract)		615	0·38	0 4	—
Telephone		130	0·08	0 1	—
Work in Connection		1,059	0·66	0 6	0 0½
Mechanical Services Total		29,646	18·55	14 6	0 9½
		Cost £	%	Per F.S. s. d.	Per F.C. s. d.
Drain Connection		312	0·20	0 1½	—
Drains		5,108	3·19	2 6	0 1½
Drainage Total		5,420	3·39	2 7½	0 1½
Fittings: Laboratory benches, Library Fittings, Workshop benches, Demonstration units, etc.		—	—	—	—
Stage Lighting, Steps and Access Ladder		—	—	—	—
Projection Room Shutters		—	—	—	—
Hose Reels and Fire Prevention Equipment		9,820	6·14	4 9½	0 3
Lightning Conductor		—	—	—	—
External Works Total		21,307	13·33	10 5	0 7
Site clearance and excavation £3,720 0s. 0d.					
Roads and paved areas £7,010 0s. 0d.					
Retaining walls £6,240 0s. 0d.					
Boundary fencing and gates £755 0s. 0d.					
Other work £3,582 0s. 0d.					
Preliminaries		5,788	3·62	2 10	0 2
Increased Costs		1,650	1·03	0 9½	0 0½
Anticipated Final Account		159,833	100·00	78 2	4 3
Total Cost of Tender (less Contingencies)		166,537	—	—	—

College of Further Education

the natural hollow in the ground to site the boiler house at lower ground floor level.

Foundations had to be designed with the minimum excavation, and the load bearing elements reduced to a minimum. Thus the structural module was fixed at 20 ft. By stepping the blocks down the slope and resting the foundations on the rock, it was possible to avoid excavation, but the danger of the blocks slipping down the slope had to be overcome by forming concrete toes into rock at the rear of each block. The resulting space between the underside of the floors and the slope of the ground was used as a natural duct for the services and as a space in which to carry the drains, slung from the floors so as to avoid excavation again. Steelwork was kept to a minimum and as simple as possible, with portal frames in the hall and only light steel beams to the dining, administrative and ancillary blocks. All steelwork is exposed internally and painted. Pre-stressed concrete beams are used for the floors. The roofs to the teaching and workshop blocks are formed by bolting together shop-drilled R.S.J.'s to form a type of raft merely resting on the brick piers, with timber joists notched between the flanges. Roofing is composed of insulated timber decking with three-ply roofing felt having a grit finish. Heating is by low pressure hot water system, designed for burning oil or solid fuel.

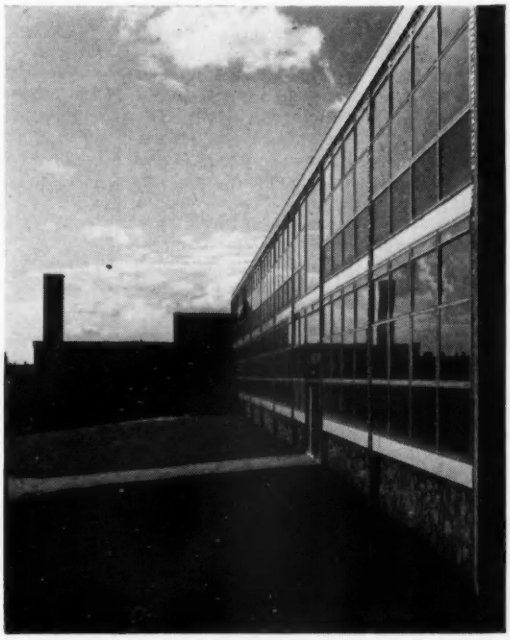
The contract commenced in April, 1958, and was completed in December, 1960. Architects: C. A. Spivey, D. S. Coutts; job architect: D. B. Stephenson; engineer: S. Boyd; quantity surveyor: K. Whittaker.

The cost of the College was brought to tender within the Ministry cost limits (nett saving, £6,163) due to the methods of construction adopted by the architect, in spite of the difficult rock site, so that extra site works, playing fields, etc., could be included without exceeding the Ministry limits.

sub-contractors & suppliers:

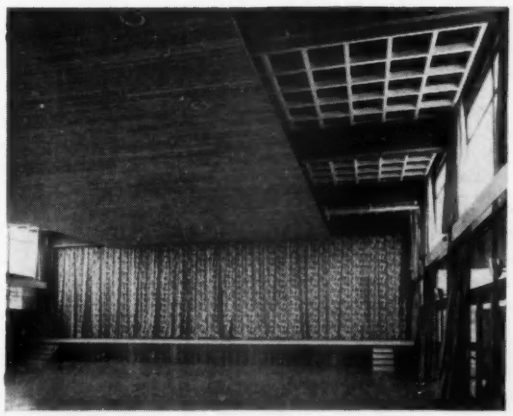
Electrical installation & fittings: Engineering Service Co.; *heating installation, oil firing plant, ventilation & domestic hot water supply:* C. Seward & Co. Ltd.; *structural steelwork:* John Booth & Sons Ltd.; *felt roofing:* Wm. Briggs & Sons Ltd.; *waterproofed rendering:* W. J. Harries Ltd.; *m/s balustrades, handrails, railings & gates:* Gorton & Blakemore Ltd.; *mosaic mural:* Carter & Co. (London) Ltd.; *fittings:* W. Fearnley & Sons; *precast and prestressed concrete:* Matthews & Mumby Ltd.; *rod reinforcement:* G.K.N. Reinforcements Ltd.; *fabric reinforcement:* Ferrocon Engineering Co. Ltd.; *metal windows:* Metfabs Ltd.; *Carda windows and blinds:* Holcon Ltd.; *locks:* W. & R. Leggott Ltd.; *hose reels & fire prevention:* J. E. Mercer.

administration, south corner



teaching block

assembly hall



Sculpture in Public Places

Exhibition of LCC Acquisitions

HOSTILITY to modern art has, over the past fifty years, made a 'public art' of any consequence almost impossible. There are, of course, a few notable exceptions, the most significant of these being the London County Council's 'patronage of the arts' scheme which has often been commented upon in these columns. This scheme has been operating since 1956 and already some thirty works have been acquired by the council, most of them new and commissioned from the artists. An exhibition held last week in the foyer of the Royal Festival Hall showed photographs of about twenty works, seven of the maquettes from which final pieces were executed, and two originals.

The fine arts today are no longer required to fulfil a specific political or religious function and have thus gained a greater freedom. This was one of the notable features of the exhibition and it was evident that new expressions in sculpture are being found in a simplicity which is not trite and which fits well into the process of rebuilding for which they were designed. None, unfortunately, raises contemporary sculpture to the point of being architectually significant because, although they all undoubtedly have a direct relationship to their settings, they fall into the category of applied ornament.

Of the works shown by the LCC the most beautiful and finely executed was Uli Nimptsch's 'Neighbourly Encounter,' one of the two originals. (This was also exhibited at the Royal Academy summer exhibition this year.) It is an outstanding example of its kind, a sensitively handled, life-size portrait of two young people sitting on different sides of a fence. It is in bronze and will eventually be placed in a paved square with an ornamental pool which forms the focal point of the Silwood housing estate. The fence is a symbolical representation of the common boundary between the two boroughs of Bermondsey and Deptford which runs through the square, the young people expressing the friendliness between communities.

Siegfried Charoux's 'The Neighbours,' which is to be seen on a greensward bounded by old people's dwellings in the centre of the Quadrant estate, Islington, is based on a similar theme, neighbourliness symbolised by the contact of two seated figures. The masses of the figures are in this case loosely composed creating a silhouette which is interesting and easily understood from a variety of angles and from a distance. The material is a cement covered with a top layer of powdered iron, synthetic resin and an aggregate of crushed marble.

Whether the unusual use of new material, new that is to sculpture, comes off is still a matter of controversy, but Robert Clatworthy's 'The Bull,' which was shown at the Holland Park exhibition of 1957, is a brave attempt to discover in plaster the sheer physical power of this animal. It now stands within the Alton estate in Roehampton-lane.

Other works shown included Georg Ehrlich's 'Faun with Goose,' a bronze figure representing a goose trying to escape from the grip of a faun, adapted to form a fountain playing into a circular mosaic pool with fish and plants at Sarel House, Bethnal Green; Ralph Brown's 'Man and Child,' a very tall figure cast in concrete and fibreglass based on the Anchises-St. Christopher theme of a man supporting a child (Tulse Hill School); Trevor Tennant's 'Girls Playing Netball,' a group of free but inter-related figures in reinforced ciment fondu (Barnsbury Secondary School for girls); and the late Karel Vogel's 'Sculpture,' a work cast in concrete which is sited beside the Great West Road immediately west of St. Peter's Church at Hammersmith and is designed to relate the neo-classicism of the early nineteenth-century church and the nearby buildings to the modern road.

'Neighbourly Encounter' (bronze) by Uli Nimptsch, ARA

Above left: 'Sculpture' (cast concrete) by Tom Painter. Right: 'Girls Playing Netball' (reinforced ciment fondu) by Trevor Tennant. Below left: 'Sculpture' (bronze) by Bernard Meadows. Right: 'Drinking Calf' (bronze) by Georg Ehrlich

'The Builder' Cost of Building Chart

Variations from 1914 to Date

(*Copyright: H. J. Venning, FRICS, ARIBA, and 'The Builder'*)

CHARTS ON THIS PAGE AND OVERLEAF show (Chart A) the fluctuations in Wages and Building Costs from 1914 to date, and (Chart B) the rise in Wages, Materials and Building Costs over the years 1939 to October 1961. They have been compiled by Mr. H. J. Venning, FRICS, ARIBA.

When examining the Chart it should be borne in mind that the recent wage increase is exceptional in several ways, particularly in being notified so far in advance, and there is no indication that the steep increase in building costs in 1961 is a continuing trend; in fact, there are pointers the other way.

The Index is shown at October, 1961, as standing at 413 compared with 384 in February, 1961. The increase is largely accounted for by the addition of 6d. to the hourly operatives' rate and the reduction of the working week to 42 hours which came into force on October 2, 1961.

The line showing building costs is in each case based on actual tenders for the normal run of building contracts.

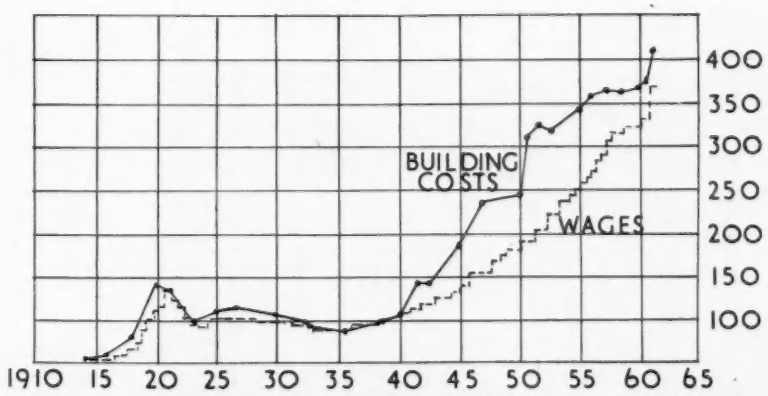
The line for materials is based on the figure published by the Central Statistical Office.

The line for wages is based on a conventional average of one labourer to one craftsman, and takes account of indirect benefits as shown in the Table. The table of variations does not include anything to do with incentive payments.

The line of building costs must necessarily be based on instances where a reasonable range of competition in tendering is obtainable. The line in special instances would be affected by a high degree of mechanisation in some cases or a long-term fixed price contract in others.

Wages of one craftsman and one labourer (London rates) separately and conjointly with an allowance for emoluments such as the guaranteed week, holidays with pay and allowances under the working rules.

Date	*Craftsman Labourer*	*Conjointly*	*Pence*	*Percentage Allowance*	*Actual Cost in Pence*	*Index Figure*
June, 1939	1/9 +1/3½	3/0½	36·75	+ 5	38·59	100
December, 1939	1/9½ +1/4½	3/1½	37·75	"	39·64	102·7
January, 1940	1/10 +1/4½	3/2½	38·75	"	40·69	105·4
June, 1940	1/10½ +1/5½	3/3½	39·75	"	41·75	108·2
September, 1940	1/11 +1/5½	3/4½	40·75	"	42·78	110·8
February, 1941	1/11½ +1/6½	3/5½	41·75	"	43·84	113·6
June, 1941	2/0 +1/6½	3/6½	42·75	"	44·89	116·3
February, 1942	2/0½ +1/7½	3/7½	43·75	"	45·94	119·05
February, 1943	Holiday Stamp	3/7½	43·75	+ 5½	46·04	119·3
April, 1943	2/1½ +1/8	3/9½	45·5	"	47·89	124·1
November, 1944	2/2½ +1/8½	3/11½	47·25	"	49·73	128·8
February, 1945	2/2½ +1/9½	3/11½	47·75	"	50·25	130·2
July, 1945	2/3½ +1/10	4/1½	49·5	"	52·09	135·0
October, 1945	Guaranteed Week	4/1½	49·5	+ 6½	52·72	136·6
January 1, 1946	2/7½ +2/1½	4/8½	56·75	"	60·44	156·6
September 30, 1946 ...	Increase H.I.	4/8½	56·75	6½	60·58	157·0
February, 1947	Travelling	4/8½	56·75	7	60·72	157·3
September, 1947	Holiday Stamp	4/8½	56·75	7½	60·86	157·7
November 16, 1947 ...	2/10½ +2/3½	5/2½	62·25	+ 7	66·61	172·6
July 5, 1948	Health Scheme	5/2½	62·25	+10	68·48	177·4
July 11, 1948	2/11 +2/4	5/3	63·0	"	69·30	179·5
February 7, 1949	2/11½ +2/4½	5/4	64·0	"	70·4	182·4
October 3, 1949	2/11½ +2/5	5/4½	64·5	"	70·95	183·9
February 6, 1950	3/0 +2/6	5/6	66·0	"	72·6	188·1
July 3, 1950	3/0 +2/6½	5/6½	66·5	"	73·15	189·5
February 5, 1951	3/0½ +2/7	5/7½	67·5	"	74·25	192·4
March, 1951	3/3 +2/9½	6/0½	72·5	"	79·75	206·6
March 26, 1951	Holiday 3d.	6/0½	72·5	"	79·75	206·6
April 2, 1951	Holiday 3d.	6/0½	72·5	"	79·75	206·6
October 1, 1951	Increase Insurance	6/0½	72·5	"	79·75	206·6
February 4, 1952	3/6 +3/0½	6/6½	78·5	+10½	86·74	224·8
April 7 & 11, 1952... ...	Holiday Stamp	—	78·5	10½	86·9	225·3
October 6, 1952	Increase Insurance	—	78·5	11	87·13	225·8
February 2, 1953	3/8 +3/2½	6/10½	82·5	10	90·75	235·2
April 6, 1953	Extra week's holiday	—	82·5	12	92·4	239·4
February 1, 1954	3/9 +3/3½	7/0½	84·5	11½	94·43	244·7
May 24, 1954	3/10½ +3/5	7/3½	87·5	11½	97·56	252·8
February 7, 1955	3/11 +3/5½	7/4½	88·5	"	98·67	255·7
April 18, 1955	4/1½ +3/7	7/8½	92·5	11	102·67	266·0
April 4 & 11, 1955... ...	Holiday Stamps 1/- and 6d.	—	92·5	12	103·6	268·5
June 6, 1955	Increase Insurance	—	92·5	12½	104·06	269·7
February 6, 1956	4/2½ +3/8	7/10½	94·5	11½	105·6	273·6
April 16, 1956	4/5 +3/10½	8/3½	99·5	11½	110·9	287·4
February 4, 1957	4/6 +3/11½	8/5½	101·5	10½	112·4	291·3
April 1 & 22, 1957... ...	Holiday Stamps 1/- and 6d.	—	101·5	12	113·68	294·6
May 27, 1957	4/7½ +4/1	8/8½	104·5	11½	116·78	302·6
September 2, 1957	N. Insurance 2d. Increase	8/8½	104·5	11½	116·78	302·6
February 3, 1958	Do. 1/11					
February 3, 1958	4/8½ +4/2	8/10	106·5	12½	119·81	310·5
June 23, 1958	4/9½ +4/3	9/0½	108·5	12½	122·06	316·3
July 7, 1958	N. Insurance 2d. Increase	9/0½	108·5	12½	122·06	316·3
February 2, 1959	4/10½ +4/4	9/2½	110·5	12½	124·04	321·4
March 23, 1959	Holiday Stamp 3d.	9/2½	110·5	12½	124·32	322·2
April 6, 1959	Do. 6d.					
April 18, 1960	5/1 +4/5½	9/6½	114·5	12½	128·5	332·9
October 3, 1960	Amendment Working Hours and Wage Gradings					
February 3, 1961	5/1½ +4/6	9/7½	115·5	12½	129·6	335·8
April 3, 1961	Graduated Pension and Insurance Stamps					
July 3rd, 1961...	Increase in Insurance Stamps					
October 2, 1961	5/7½ +5/-	10/7½	127·5	12¾	143·75	372·50

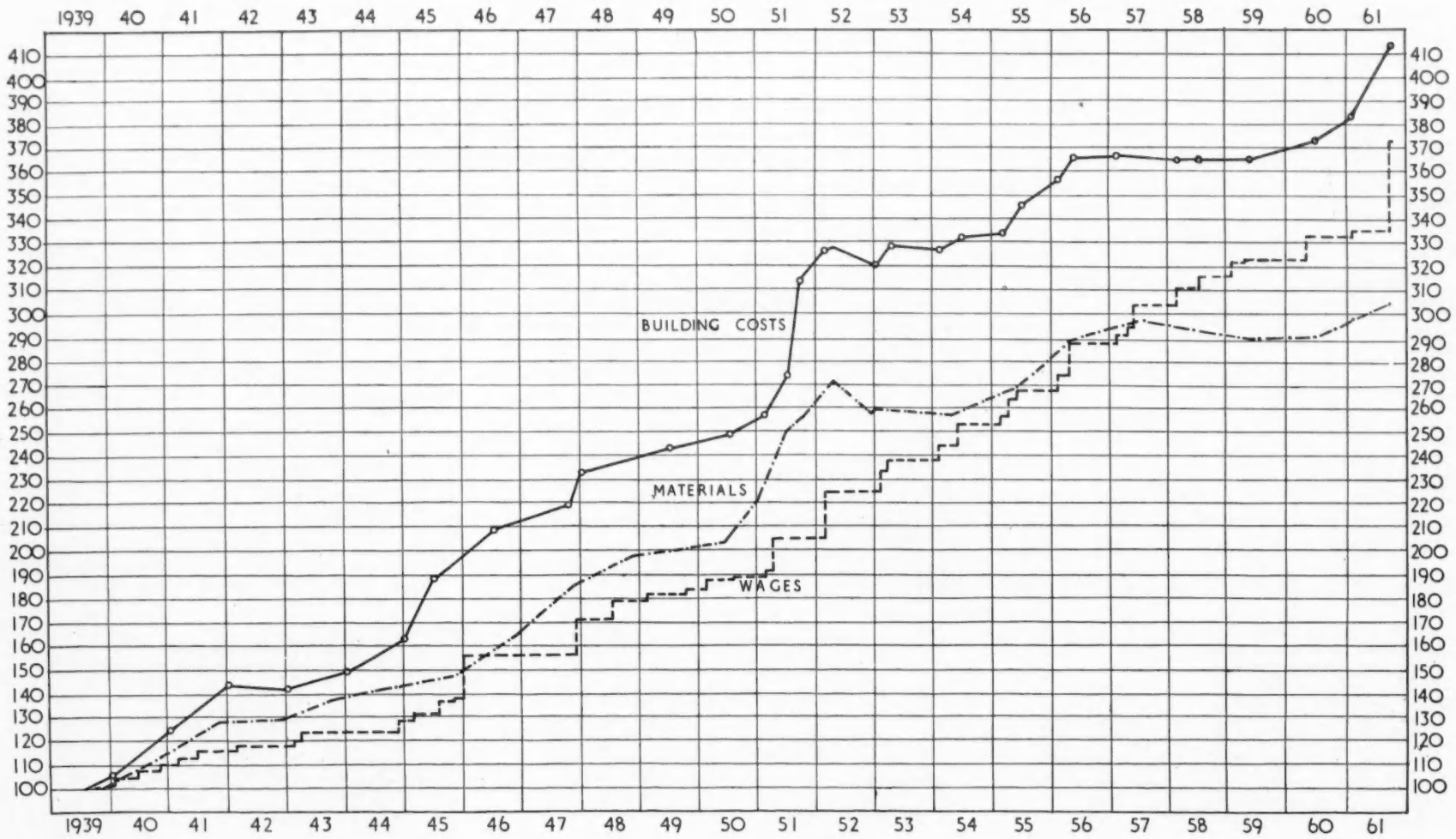


Building Costs, 1914-1961: This chart (A) shows the fluctuations in Wages and Cost of Building from 1914 to date

'The Builder' Cost of Building Chart

Reprints of this Chart, printed on stiff card, are now available for office use. Copies may be ordered from the Publisher, The Builder, Ltd., 4 Catherine-street, Aldwych, London, WC2, price 1s. 3d. each (1s. 6d. post paid). Orders for one dozen copies or more are post free. Cash should accompany the order.

THE COST OF BUILDING.—*Variations from 1939 to October, 1961, shown in Charts prepared by H. J. Venning, FRICS, ARIBA, Chartered Quantity Surveyor*
With this should be read the notes on preceding page



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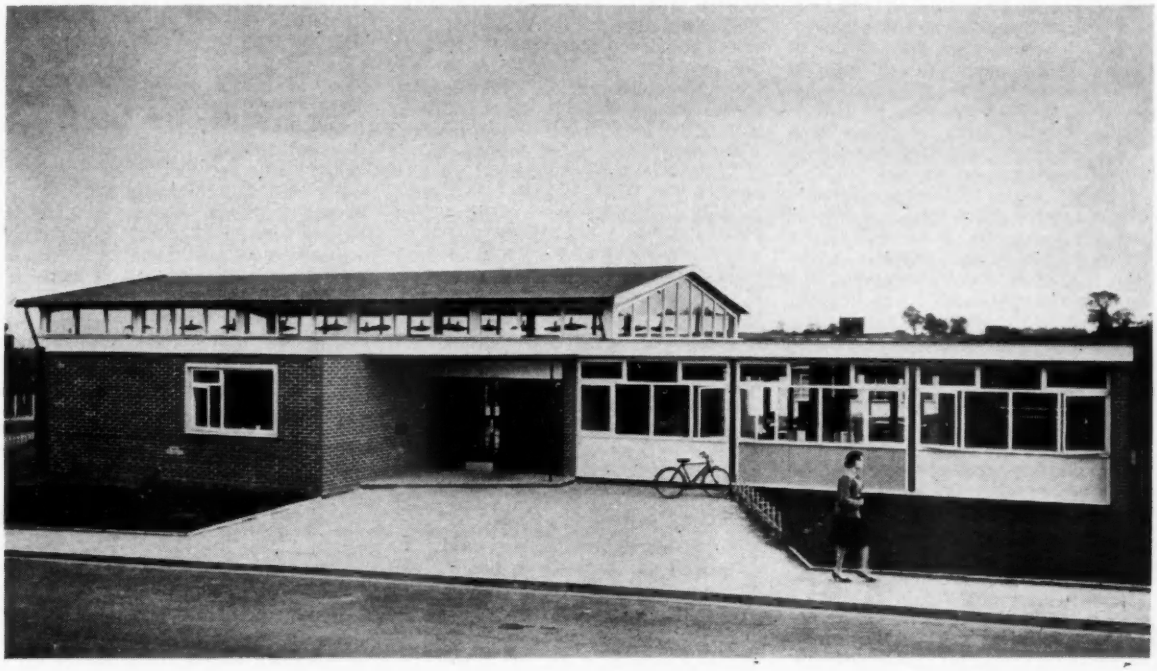
BUILDING COSTS, 1939-1961 (CHART B).—*Plotted above are the fluctuations in Wages, Materials and Building Costs over the years 1939 (Datum 100) to October, 1961. It is estimated that the figure at October, 1961, is 413, compared with 384 in February, 1961. On page 623 are itemised the various wages and other increases since 1939*

Branch Library, Gloucestershire

R. F. FAIRHURST, ARIBA, AMTPI, county architect
W. H. SANDERSON, ARIBA, divisional architect
BARE, LEANING & BARE, quantity surveyors
F. H. ELBROW LTD., general contractors



KINGSWOOD LIBRARY, situated in High-street, Kingswood, to the east of the main shopping centre and close to the Public Park, provides an adult lending library, a children's library, staff and work rooms and lavatories. A layby has been provided off the main street in front of the library for visitors' cars and a paved area for parking prams and cycles. Vans delivering books to the library use the service yard.

On the south side, away from the main street, paved terraces have been laid in front of the adult and children's libraries. The remainder of the site is laid out with lawns and a few flowering trees.

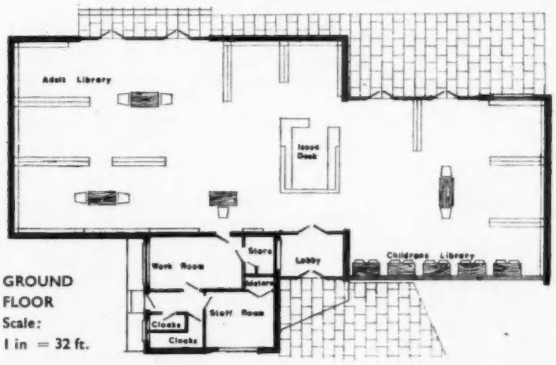
The construction of the two large rooms is of welded steel frames, with walls of cavity brickwork and 'Golden Buff' facings. Windows are in softwood with pivoted sashes at high level. The roof is covered with wood wool slabs, screeded and finished with mineral surfaced bituminous felt. Flooring is of Afzelia hardwood block laid herringbone pattern. Ceilings are acoustic tiles painted, with portal frames picked out in white.

Heating is electric underfloor controlled by time switches and thermostats for off-peak load supply. Lavatories and staff room have electric water heaters.

The contract commenced in March, 1960, and was completed in January, 1961. Floor area: 3,650 sq. ft.; building cost: £14,750; furniture: £2,000. Assistant architects: G. N. Crawford, ARIBA, and B. J. Bishop, ARIBA.

sub-contractors & suppliers:

Steelwork: Gardiners Sons & Co., Ltd.; *roofing:* Wm. Briggs & Sons Ltd.; *floors:* Stevens & Adams Ltd.; Stonewood Flooring Co.; *ceilings:* F. H. Elbrow (Ceilings) Ltd.; *electrical installation:* Beverstock Electrical Ltd.; *railings & gates:* Tucker Bros.; *layout of surrounds:* A. Bailey; *shelving & issue desk:* F. H. Elbrow Ltd.; *chairs & tables:* Hille of London Ltd.



GROUND FLOOR
Scale:
1 in = 32 ft.

More Everyday Things

BY ARTHUR W. KENYON, CBE, FRIBA

62. London's Face Lift

SHOULD STONE BUILDINGS be washed? All my instincts say No! but then I look again and find myself saying Yes! We have become so accustomed in London to the wonderful black-and-white effects of begrimed Portland stone, that the idea of washing off this patina of soot does not immediately appeal. No one would think of washing St. Paul's, yet how beautiful it must have looked when it was new, with all the rich moulding and carvings taking on their shadows from the sun.

I was watching a building today undergoing its first bath of this kind since it was built some fifty years ago, and it reminded me of the pictures in the National Gallery when the age-darkened varnish is removed, revealing the richness of the original colours and the delicate backgrounds which no one knew were there. As I watch buildings emerge from their veil of soot and grime, I begin to appreciate the true cleansing properties of soap and water—or sometimes, it may just be plain water.

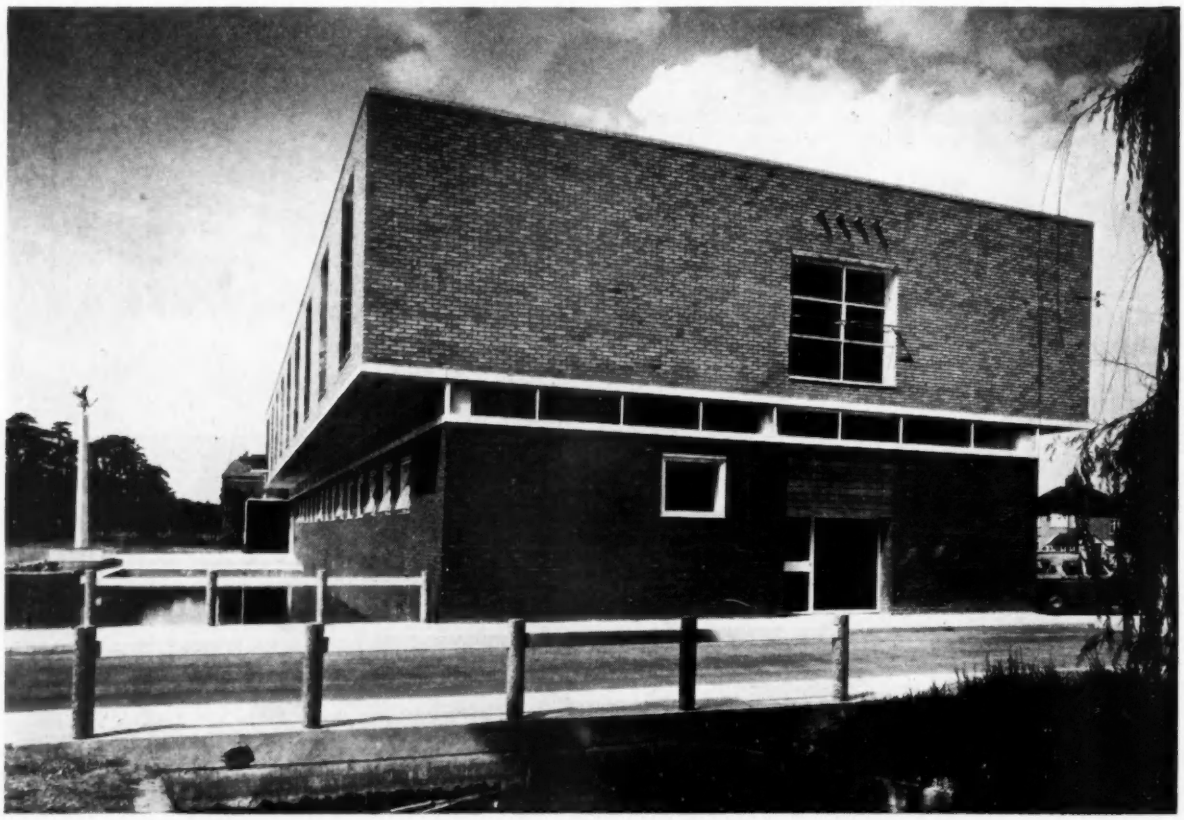
Once the scene is set for one of these mammoth cleaning operations, the actual job of washing seems to be very rapidly done. The preparation is, however, a very skilled job, done either by the erection of scaffolding or by cradles suspended from poles on the roof from which the men do their work. I stand in awe and wonderment at their agility and skill, and at the apparent nonchalance with which they carry out their hazardous job. Yet I envy them a little too, for it must be fascinating and exciting to watch the layer of pure dirt peel off almost like wallpaper under their ministrations.

There are some buildings, however, which do not wash gracefully: some types of stone become blotchy and discoloured. I remember the process being tried at the National Gallery, with disastrous results. Fortunately, it was stopped before too much harm was done. Old brickwork, washed down, can do all manner of things it shouldn't: the lime gets washed out of the joints and finds its way into the brickwork. Two brick buildings which come to my mind as the worse for recent cleaning—one in St. James's-street, and the other Lutyens's Bank in Piccadilly—both look fresh and clean, but the colour has gone out of them.

What are we doing about new buildings? Are we finding new materials which will clean naturally with the rain, or are we putting clauses in our leases, as they did in the Regent's tenancies, that they must be cleaned (painted if stucco) every three years, and all at the same time as their neighbours? What is happening about the cleaning of all the glass buildings? Do the owners keep an army of window-cleaners on their permanent staff, or is the glass eventually to become opaque?

I am pleased to see this new enthusiasm for cleanliness in our smoke-stained city. Is it too much to hope that the enthusiasm of the men on the scaffolds may in time infect the people in our litter-strewn streets below?

ENFIELD CIVIC CENTRE.—*The completed civic centre for the Enfield borough council, designed by Mr. Eric G. Broughton, ARIBA, AMTPI, ARCA, and built by Messrs. Allen Fairhead and Sons Ltd. The quantity surveyors were Messrs. Mercer and Miller. Mr. Broughton was commissioned to carry out this work after submitting the winning design in competition*



News of the Week

Lectures on Modern Architecture

A SERIES of three illustrated lectures will be given during the autumn at the RIBA by Mr. R. Furneaux Jordan, AA Dipl., ARIBA. Mr. Jordan has been principal of the Architectural Association School of Architecture and Professor of Architecture at Leeds University. The first lecture, 'Prelude,' will be held on November 15, at 6 p.m. and will cover the emergence of modern architecture. The second, on November 22 at 6 p.m., will describe, under the title 'Modern Architecture Abroad,' the influence of structural changes, and the work and influence of several eminent architects. 'Modern Architecture at Home' will be the subject of the third lecture on November 29 at the same time. Tickets are available from the secretary, RIBA, 66 Portland-place, London, W1, price 6s. for the series or 2s. 6d. per lecture. Postal applications should be marked 'Public Lectures' on the envelope.

AA Tropical Studies Department

THE NEW SESSION of the Architectural Association's department of tropical studies, of which Dr. O. H. Koenigsberger is head, opened on October 2 with 25 students from 10 countries, including the United Kingdom, USA and Sweden, in addition to many tropical regions in Asia and Africa. Others, including 4 architects from the War Office, will be attending the evening classes and lectures. The Swedish student has been nominated by the Swedish Government, which has established an Ethio-Swedish Institute of Building Technology in Addis Ababa, an institution concerned both with research and teaching. Mr. Uno Winblad has been asked to spend one month at the Rotterdam Bouwcentrum and then six months in the Architectural Association's tropical studies department, to prepare him for his appointment in Ethiopia. The AA course is designed with such flexibility that it will be possible for Mr. Winblad's studies largely to be directed towards his particular type of work, which in the case of the Ethio-Swedish Institute will be to studies of technical information services.

Further Development of South Bank

IN THE LIGHT of the economic restrictions, discussions have taken place between Sir Isaac Hayward, Leader of the London County Council, and Mr. Henry Brooke, Minister of Housing and Local Government, about the further development of the South Bank scheme. A scheme for phasing the work which would avoid any significant expenditure during the two coming financial years was suggested by Sir Isaac Hayward. This scheme would mean completion of the Royal Festival Hall in December, 1964, and the completion of the small concert hall and exhibition gallery in March, 1965. Mr. Brooke has told Sir Isaac that the Government has agreed that the first stage in this time-table may go ahead and the Council will therefore be able to start work on the Royal Festival Hall in the summer of 1962.

Civic Centre, Tonbridge

AN ARCHITECT is to be chosen 'for his experience and knowledge of designing and modernising old buildings' to design a new £85,000 Civic Centre for Tonbridge, Kent.

Opinions were sharply divided when members of the UDC's finance and general purposes committee debated whether a single architect should be engaged or there should be an open competition in which architects would submit designs for the council's consideration. The selection of a single architect was finally decided upon.

Commented Cllr. W. H. J. Mann: 'If no competition is held, we may have the opportunity of employing a young architect instead of some bald-headed, bearded type.'

Cecil Houses

THE ADMIRABLE WORK done by Cecil Houses (Inc.)—that body of public-spirited people founded some 33 years ago by Mrs. Cecil Chesterton with the object of providing residential accommodation for homeless women—continues at full stretch. It extended some years ago to the care of the elderly infirm, of whom 72 live in the Cecil Residential Club for old age women pensioners in Wedlake-street, North Kensington. To this, a necessary Infirm wing is being added to the plans of Mr. Percy Kelly of Hastie, Winch & Kelly (Cecil Houses have always made good use of the architectural profession—Maxwell Fry designed the residential club in Gower-street in 1938) and Messrs. F. G. Minter Ltd. are the builders. Of the contract price of £65,480, all but £17,000 has been raised. Well-wishers can give practical help by supporting the annual bazaar in Kensington Town Hall on October 24 or by sending a donation to the secretary, Mrs. E. Gordon Phillips at 193 Gower-street, NW1.

Edinburgh Subterranean Theatre Plan

MR. T. WALLER MARWICK, FRIBA, the Edinburgh architect who is at present engaged as consultant on the preparation of a large car park in the precincts of Edinburgh Castle, has submitted a plan to the Corporation for a subterranean opera house or national theatre to be constructed in the rock beneath the castle. The plan is now being considered by Edinburgh Corporation's planning committee. A plan has already been approved in principle for the erection of an opera house cum theatre as part of development on the site of the present Lyceum Theatre.

Improvement Scheme in Guildford

FOLLOWING A DECISION to investigate the possibility of giving North-street, Guildford, a 'face-lift' on the lines of the successful Civic Trust experiment in Magdalen-street, Norwich, the North-street Improvement Committee is offering the post of co-ordinating architect to Mr. J. R. Dartford, ARIBA, who will be asked to prepare a preliminary report and sketch plans. Help with the scheme has come from Guildford Camera Club, which has agreed to photograph both sides of North-street charging at cost.

Euston's Doric Arch

IN A LAST and unsuccessful appeal for the preservation of the Doric Arch at Euston station the Royal Fine Art Commission deplored the decision by British Railways to commence demolition. This decision, if implemented, stated the commission in a letter to the Minister of Transport on September 22, would result in all traces of the original Euston station being swept away. In the commission's view the least which should be done is to preserve the Doric arch in a way that would not interfere with railway operations, even if this involved substantial extra cost. The commission believed that a further study of the problem might reveal alternative methods of re-erection at considerably less cost.

In his reply, Mr. Marples, the Transport Minister, stated that although the idea of moving the arch to a new site was an attractive one, the expense of such a solution could not be justified. He could see no possibility of modifying the decision to demolish.

The Victorian Society is making an effort to save the arch by starting a fund. Its aim is to raise £90,000, which it believes will be necessary to move the arch nearer to the Euston-road. In the meantime the Minister has been asked to delay demolition. It is estimated that the arch would cost £190,000 to re-erect, compared with £16,500 for demolition. It is understood that work on demolition will begin in about a week's time.

Housing Centre Trust

AN illustrated talk entitled 'Swedish Tour Re-union' is to be given by Mr. Felix Walter, FRIBA, at the Housing Centre Trust, 13 Suffolk-street, SW1, on October 10 at 6 p.m. Chairman will be Miss J. G. Ledeboer, MA, FRIBA. Tea and refreshments will be available at 5.30 p.m. before the meeting.

LMBA Area's Ladies' Night

THE ANNUAL LADIES' NIGHT dinner and dance, organised by the North-Eastern area of the LMBA, was held in the Dorchester Hotel on Monday night, when nearly 200 members and guests were present. This party, always one of the happiest in the building calendar, was organised as usual by Mr. Percy H. Bates, senior vice-President of the LMBA, whose President (Mr. Bob Mansell) and Director (Dr. C. A. Hart) were among the guests who were welcomed by the Area Chairman, Mr. I. G. Holt and his niece, Miss Juliet Wells. The Association's health was felicitously proposed by Mr. Holt. Mr. Mansell responding, and The Ladies and Guests, amusingly proposed by Mr. Malcolm J. Dean, junior vice-president, were compositely replied for by Mr.

Ian M. Leslie. Not even the 'teabreak' disturbances could wreck a very happy evening which did not end until long after midnight.

Mr. Hubbard-Ford's Assignment

MR. H. HUBBARD-FORD, JP, FRIBA, flew to Canada last week to advise on the redevelopment, extension and improvement of the properties of Messrs. Holt Renfrew & Co., the chain of fashion and fur shops in Canada, in which Messrs. Blackett & Son, the English store group, acquired a controlling interest earlier this year. Mr. Hubbard-Ford is also advising the group on the acquisition of new properties in Canada. He was recently appointed to design the halls of residence of the new Sussex University, in consultation with Sir Basil Spence, RA.

Architectural Panel Sought at Beckenham

THE BECKENHAM PLANNING GROUP have suggested that a local architects' panel be established to assist the council if they wanted advice on building schemes. In a letter to the Building Control and Town Planning Committee, the group said that although there was already a panel to assist the county council which the borough council could use, a Beckenham panel would have closer local interests. The Building Control Committee have deferred consideration of the groups suggestion so that the borough engineer can obtain further information.

Structural Engineers' Examinations

RESULTS have been issued by the Institution of Structural Engineers of its examinations held at home and overseas centres in July. Twenty-two candidates were successful in the graduateship examination; 80 passed the associate membership examination (section A); 194 the associate membership examination (section B); and 52 a special paper on specifications, quantities and estimates for associate membership.

IoB Discussion Club Dinner

THE IOB DISCUSSION CLUB is to hold its annual dinner and dance on Saturday, November 4 at the Kensington Palace Hotel, at 6 p.m. for 6.30 p.m. Dancing will take place from 8 p.m. until midnight. Tickets can be obtained from the secretary of the club at 48 Bedford-square, London, WC1.

Appointments and Retirements

MR. J. E. BARLOW, ARIBA, MTPI, director of town planning at Aberdeen since 1949, has been appointed to the new post of planning officer at Sunderland.

MR. J. BLACKETT, FRIBA, borough architect at Newport, Monmouthshire, is retiring, and is succeeded by MR. L. W. D. WALL, ARIBA, deputy borough architect. MR. D. B. OWEN, ARIBA, chief assistant architect, has been promoted deputy borough architect in succession to Mr. Wall.

MR. D. P. CARTWRIGHT, deputy borough engineer and surveyor at Newport, Monmouthshire, has been promoted borough engineer and surveyor to succeed MR. E. A. MIDDLE, AMICE, who is retiring. MR. R. P. RADCLIFFE, chief assistant engineer, has been promoted deputy borough engineer and surveyor, to succeed Mr. Cartwright.

MR. W. P. HALDANE, MBE, BSC., MICE, the present City Engineer and Master of Works in Edinburgh, is retiring on November 11, and Edinburgh Corporation have appointed Mr. F. R. Dinnis, Deputy City Engineer, as his successor.

THE BRITISH TRANSPORT COMMISSION announce that Mr. C. L. Smith, FRICS, Estate and Rating Surveyor, North Eastern Region, British Railways, has been appointed as Surveyor to Railway Sites Ltd.

MR. G. SIREE has been appointed engineer and surveyor to Milnrow urban district council, Lancashire, in succession to MR. P. H. EYRE, who has been appointed divisional surveyor to Nottinghamshire county council.

MR. SYDNEY CLEMENT MOPPETT, chief assistant engineer, Beeston and Stapleford urban district council, has been promoted engineer and surveyor, in succession to MR. B. H. PATTINSON, who has been appointed borough engineer and surveyor at Reigate, Surrey.

MR. W. S. PICKETT, MINST.RA, engineer, surveyor and architect to March urban district council for 32 years, is to retire at the end of the year.

A Hundred Years Ago

From The Builder of Oct. 5, 1861

BUILDING ACCIDENTS.—A workman, employed on the works of the Metropolitan Underground Railway, while working on the top of one of the lofty shafts, by some means overbalanced himself and fell from the top of the shaft, a distance of 60 feet, into the tunnel. The poor fellow was crushed in an awful manner, life being quite extinct.

Coming Events

FRIDAY, OCTOBER 6

MANCHESTER BUILDING CENTRE.—Exhibition: 'Sunday Times House of Today.' 115 Portland-St., Manchester 1 (until Oct. 14).

MONDAY, OCTOBER 9

SOCIETY FOR THE PROTECTION OF ANCIENT BUILDINGS.—Annual course on repair of ancient buildings. 55 Great Ormond-st., London, WC1 (until Oct. 14).

TUESDAY, OCTOBER 10

INSTITUTION OF CIVIL ENGINEERS.—Informal discussion: 'Site Organisation,' by Mr. R. S. Read. Gt. George-st., SW1. 5.30 p.m.

HOUSING CENTRE TRUST.—'Swedish Tour Re-union,' by Mr. Felix Walter. 13 Suffolk-st., SW1. 6 p.m.

REINFORCED CONCRETE ASSOCIATION (MIDLANDS COUNTIES BRANCH).—'Architectural Uses of Concrete in the Far East,' by Mr. P. Langley. Birmingham & Midland Institute, Paradise-st., Birmingham 1. 6 p.m.

BUILDERS' CLERKS' BENEVOLENT INSTITUTION.—75th annual dinner. Café Royal, Regent-st., W1. 6.30 p.m.

LONDON BUILDERS' FOREMEN'S ASSOCIATION.—Film and lecture on the Park Lane improvement scheme, by Mr. F. M. Fuller. Caxton Hall, SW1. 6.30 p.m.

WEDNESDAY, OCTOBER 11

BRITISH COAL UTILISATION RESEARCH ASSOCIATION.—10th Coal Science lecture: 'The Position of Coal in Electric Power Generation,' by Mr. L. Rotherham. Conway Hall, Red Lion-sq., Holborn, WC1. 5.30 p.m.

INSTITUTION OF PUBLIC HEALTH ENGINEERS.—Induction of the President, Mr. H. D. Manning, and reception by retiring president, Mr. R. F. Pearson. Caxton Hall, Westminster, SW1. 6 p.m.

THURSDAY, OCTOBER 12

LONDON SOCIETY.—Lecture: 'Leisure and Land Use in the Metropolitan Green Belt,' by Mr. W. F. B. Lovett. RSA, 6-8 John Adam-st., Adelphi, WC2. 5.30 p.m.

INSTITUTION OF STRUCTURAL ENGINEERS.—'Professional Practice and Drawing Office Procedure,' by Mr. L. R. Creasy. 11 Upper Belgrave-st., SW1. 6 p.m.

CPRE.—22nd National Conference for the Preservation of the Countryside. Southport. 8.30 p.m. (until Oct. 14).

FRIDAY, OCTOBER 13

INSTITUTE OF ADVANCED ARCHITECTURAL STUDIES.—Course on Architectural Project Management. Micklegate, York. 3.30 p.m.

INSTITUTE OF QUANTITY SURVEYORS.—Annual dinner and dance. Trocadero Restaurant, W1. 6 p.m.

INSTITUTION OF STRUCTURAL ENGINEERS (WESTERN COUNTIES BRANCH).—Chairman's address by Mr. Clifford E. Saunders. Queen's Building, University Walk, Bristol. 6 p.m.

Competition News

Housing Group Design

INTEREST in the recently announced Housing Group Design Competition has been much greater than either of its joint sponsors, the Royal Institute of British Architects and 'Ideal Home Magazine,' expected (writes a correspondent). 400 applications for conditions had been received altogether by the end of September, a remarkably high figure for a competition involving the design of several types of dwelling and planning the lay-out of one or both 4½-acre sites.

Two first premiums of £1,000, which are additional to the RIBA scale fees payable to the winning architects when the sites at Harlow and Stockport are developed, are no doubt an attraction. An equally great, if not greater, incentive is the opportunity of making an imaginative yet practical contribution towards solving a housing problem created by the scarcity and high cost of land for building.

January 2, 1962, is the last date for submitting designs which will be assessed by Sir Basil Spence, Mr. Donald Gibson and Mr. G. Grenfell Baines. Conditions are obtainable from 'Ideal Home Magazine,' Design Competition Office, 5th Floor, 96 Long-acre, WC2.

Association of Official Architects

Paper on Salaries and Grading in Local Government

AT THE LAST annual general meeting of the Association of Official Architects the Executive's motion relative to (a) separate negotiations for Professions and (b) the level of architect grades in the Official field was unanimously agreed. Subsequently the Executive have prepared a paper (reproduced below) in advance of the establishment of the New Grading Sub-Committee.

This paper has been circulated to the other Professional Associations in Local Government; representing Engineers and Surveyors, Education Officers, Financial Officers and Legal Officers and this has prompted them to consider preparing similar statements for their own members. It is hoped these may be discussed at a joint meeting to be held later in October or early in November this year. The Association of Official Architects hopes to act as 'hosts' at such a joint meeting.

NALGO, it is stated, is being informed that the Association has, since its inauguration, taken over the work of the RIBA's former Salaried and Official Architects Committee, so far as Salaried Assistants in Official Practice are concerned—in complete agreement with the Royal Institute—and that having formulated grading structure proposals for its members and in light of the present anomaly of the APT and Lettered Grades is ready to discuss these with them. Following is the full text of the Association's paper:

The Salaries and Grading of Architects in Local Government

1. Architects in local government, below the rank of Deputy Chief Officer, are placed either on the APT grades III to V or, within the 'lettered' JNC grades. The present scales are:—

APT III.	£960-£1,160	
IV.	£1,140-£1,310	
V.	£1,310-£1,480	as from 1.9.60
JNC. A.	£1,565 max	
B.	£1,670 max	
C.	£1,560-£1,825	
D.	£1,710-£1,975	
E.	£1,860-£2,120	
F.	£2,015-£2,345	
G.	£2,240-£2,565	
H.	£2,470-£2,785	
I.	£2,615-£2,935	as from 1.10.60

These rates include London weighting.

2. The NJC Scheme of Conditions of Service lays down that—

> 'Posts occupied by assistants who are required to have passed part I and II of the RIBA Final or Special Final examination or the equivalent at one of the recognised schools of architecture and to have had at least five years' experience (including the period spent on theoretical training),' should be graded within APT III, III/IV or IV at the discretion of the employing authority.
>
> 'The grading of posts which carry duties of a more responsible character is left to employing authorities.'

3. In an article in the RIBA 'Journal' for January, 1961, analysing the returns of a number of City and Borough Architects' Departments, with a total staff of 757 qualified architects, only 85 or 11.2 per cent were on 'lettered' grades.

4. In a recent survey carried out by the RIBA covering 80 per cent of all Local Authority architects' departments the median salary of all architects employed at age 20-29 was £1,150; at age 30-34, £1,275; at age 35-59, £1,350, or grades III, IV, and V respectively. One quarter of all architects in the same age groups received £1,200, £1,350 and £1,550 respectively.

5. Whatever the field of employment, work carried out by architects is comparable and the salaries and conditions in Local Authorities at the present moment can be judged by setting them against other Public Employers.

6. *The Civil Service*

Basic Grade	£991-£1,490
Main Grade	£1,516-£2,015
Senior Grade	£2,145-£2,457
	including London weighting

The Hospital Boards

Assistant Architects		£945-£1,360
Senior Asst.	„	£1,350-£1,650
Prin. Asst.	„	£1,715-£2,085
Prin. Asst.	„	£1,815-£2,185
		including London weighting

BBC

Assistant Architect	£1,225-£1,780
Architect	£1,830-£2,000
Senior Architect	£2,265-£2,475

National Coal Board

Architects	£900-£1,250
Senior Architects ...	£1,145-£1,700
Divisional Architects	£2,100-£2,900

7. It should be noted that the present salary scales of the Civil Service and the Hospital Boards have been determined by independent Tribunals. The former by the Civil Service Tribunal in January, 1961, and the latter by the Industrial Court in June, 1960. It is also worth noting that where any of the above authorities employ private architects the same scale of fees will form the basis of payment, whatever the circumstances. Even in housing, since June 1 this year the full scale of fees is required from Local Authorities. But despite this a group leader in Local Government at best will be on grade D with a maximum of £1,975, but more probably on Grade V, maximum £1,480. His colleagues doing similar work in the Civil Service will have a maximum salary of £2,457; in the Hospital Boards £2,185 (here again this salary itself is the subject of review in the near future; prior to the recent Tribunal award this maximum was almost identical with the Civil Service).

8. The Association of Official Architects believes that incorporation within the National Joint Council of the former JNC 'lettered' grades should provide the opportunity for a review of the whole grade structure of architects in Local Government. The time is opportune to bring it into line with the emergent trends within the profession generally.

Local Authorities are meeting extreme difficulties in recruiting and maintaining staff. In the RIBA 'Journal' Article referred to above, it was shown that out of 757 positions 88 were unfilled. One of the factors that deters architects is the multiplicity of grades. The present structure of twelve grades bears no relation to the duties performed or responsibilities held. On the contrary they are a deterrent to any increase in output from the offices. A rigid hierarchy of grades, with a fixed establishment only prevents the architect from exercising his abilities and knowledge beyond the responsibilities laid down.

Architecture and good building are the product of team work, and any staff structure should express this and allow the architect to carry the maximum of responsibility of which he is capable.

9. There is a need for no more than four levels to be recognised in any grade structure. (A) The newly qualified assistant gaining experience, (B) the experienced architect capable of supervising any individual job, (C) the architect who, as 'group leader' is responsible for a team and a defined programme of work, (D) the supervisory or superintending position, where there is a need for an architect between the Deputy and 'group leader.'

It is important that advance from (A) to (B) should be on ability alone and not be limited by any fixed establishment. For this reason the Association of Official Architects recommends the following structure:

Architect	£1,000-£1,500
	£1,500-£2,000
Senior Architect ...	£2,000-£2,300
Deputy & Chief Officer	£2,300-£2,500
Principal Architect	£2,500-£3,000

It will be seen that the scales proposed are almost entirely contained within the limits of those at present in existence and given in paragraph 1. They do no more than relate a grade structure to the practice of office organisation and recognise the need to relate remuneration to the general standards of the profession.

* It is recognised that the size of groups may be related to the size of authority and some variation is required at this level.

Society of Chief Quantity Surveyors

Election of Officers

MR. R. A. D. HILL, ARICS (MIDDLESEX), was elected president of the Society of Chief Quantity Surveyors at its meeting held in London on September 15. Other members of the executive committee were elected as follows: Mr. A. G. Renton, ARICS (Berkshire), honorary secretary; Mr. H. W. Selley, ARICS (co-opted) honorary treasurer; Mr. A. C. Bawn, ARICS (Hampshire), Mr. F. W. Dayment, AIQS (Carmarthenshire), Mr. C. M. Nott, FRICS (Hertfordshire), Mr. M. F. Rice, FRICS (London), Mr. E. C. P. Wilkinson, ARICS (Warwicks.), and Mr. N. W. Wilsden, ARICS (Denbighs.).

Domestic Waste Disposal in Sweden

Effective Method of Combining a Central Heating Plant with a Rubbish Incinerator Unit in Use at Samhällsbyggen, a district of Gothenburg

LARS DIRKE, *civil engineer*

The heating plant and rubbish incinerator—the chimney is 68 metres high

FROM A SWEDISH CORRESPONDENT

IN THE DISTRICT of Västra Frölunda in Gothenburg about 9,000 new dwelling units are under construction. The heating problem has been solved in such a manner that the entire area is served by six large heating plants. Rubbish collection and burning was originally to be handled by the building establishments themselves and originally it was the intention that the heating plants were to be combined with the rubbish burning activity according to an established system. The building establishments have, however, been considering plans for the centralisation of the rubbish handling.

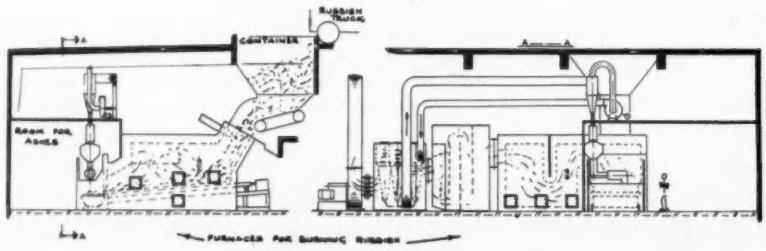
The management of one of the estates, that at Samhällsbyggen, has now built a rubbish incinerator at its heating plant at Musikvägen. The incinerator has been designed to handle about 11,000 dwelling units—this service is to be made available to some of the older districts. The advantages expected to be gained by this centralisation are, among other things, a better guarantee for a dust and odour-free operation together with a more simplified operation in the five other heating plants, which can be fully automated.

The guiding principle for Musikvägscentralen has, from the viewpoint of Samhällsbyggen, been to create a simple, effective and economical heating plant combined with a completely hygienic rubbish incinerator unit. The management of Samhällsbyggen also insisted that a high standard of hygiene be observed during the rubbish collection from the dwellings and in its transportation to the incinerator site—the rubbish collection from the dwellings is to be made in paper containers and carried to Musikvägscentralen in specially built covered trucks. The incinerator can handle a maximum of 5 tons of rubbish per hour.

The heat generated by the burning rubbish is collected in an exhaust boiler which is connected with the conventional heating plant. This, in turn, services 2,600 dwellings, which are connected with a 1.3 km. long culvert network. The rubbish burning gives a heat addition of about 6,000 Mkcal/year, which is about 15 per cent of the plant's annual heat production. During the summer months, when heat consumption is very low, it can be very difficult to dispose of the generated heat. In one case the problem has been solved partly by means of heat storage in the culvert network and partly in warm water apparatus (rubbish operation only 8 hours per day)—the smoke fumes by-pass a section of the exhaust boiler. Reduction of nuisance has been achieved by (a) an arrangement whereby rubbish trucks are emptied under cover, with the entrance gates positioned away from the building quarters; (b) automatic control of the temperature of the smoke fumes, which must not go under 800° or 900° centigrade; (c) effective separation of fly ash; and (d) the construction of a high chimney. The boiler house has been planned for ease of operation, survey and maintenance.

Rubbish is never stored because it is burnt immediately after its unloading into the rubbish hopper. The necessity of constructing artificial ramps has been avoided by building the unit on a steeply inclined site. The entrance road to the rubbish hopper, therefore, lies on a natural ground gradient the entire way.

Layout of plant



Rubbish Incinerator Construction

Rubbish is tipped from a truck into a container at upper level. To avoid the risk of blocking or overloading, the receptacle is made with its sides perpendicular. At the bottom of the receptacle is a chain-grate type conveyor which transports the rubbish forward to the firebox. A hydraulically manipulated guillotine type charging door has been installed which opens only when the furnace is to be charged. The conveyor and the door are therefore mechanically pre-adjusted so that the door opens when the conveyor starts. The charging of the furnace is intermittent and is actuated in such a way that the time between each feeding period as well as the length of that period, can be selected. Likewise, in an emergency, the feeding can automatically be stopped.

The rubbish incinerator consists of a furnace with an impact type stoker and after-burner chamber. It is equipped with two burners; one for ignition, situated in the furnace, and one to raise the gas temperature to 800° or 900° centigrade, located in the after-burner chamber. Either one can be used when needed. The stoker is of the impact type and works with back and forward movement whereby the rubbish is continu-

ously moving towards the ash discharge. The stoker has a level grate surface, made of detachable plates, and is installed in a carriage on wheels. The combustion air for the incinerator is supplied by means of a zone-divided box, with dampers under the grate. The air also serves as a coolant for the grate plates.

The incinerator has an air space between the outer steel construction and 'Plibrico' lining, which consists of 50 mm. block insulation and a 175 mm. 'Plibrico' plastic refractory anchored to surrounding steel construction. These materials have been chosen to withstand the required high temperatures and to obtain an odour-free burning. They are likewise especially resistant against the severe chemical damage that can be caused in the grate zone and elsewhere. The insulation anchorage to the iron construction is such that repair work can be done without having to tear down any of the surrounding structure.

The exhaust boiler, which has a maximum capacity of 7 Mkcal/h, has a convection section divided in two passages, one of which can be by-passed when heat is not required in the summer time, thereby increasing the temperature of gases from the boiler. The temperature must, however, never exceed 400° centigrade, in order not to damage fans, ducts and the chimney. An arrangement for the mixing in of cold air to lower the gas temperature has therefore been supplied. By-passing and air-mixture is automatically possible by the use of a motor manipulated damper. The exhaust boiler is connected to the water-feed of the other heating plant, the water supply being so regulated that the desired outgoing water temperature (100° to 120° centigrade) is obtained. The regulator, however, opens completely as soon as the waste heat boiler alone is in operation.

The dust collector is of the dynamic type and consists of 6 parallel connected units. The separation takes place in such a manner that the large, heavy particles under slow rotation are separated against the outer cone (taper) while the smaller, finer particles are separated according to the Linderoth principle against a perforated inner cone or taper.

The two induced draft fans have two-speed motors and are designed to be in operation one at a time. The fan capacity is regulated so that a constant low pressure is maintained in the incinerator. The regulation takes place by means of a track band. The chimney has, up to a height of 15 m., an inner lining as a protection against high gas temperatures. In the space between the lining and the outer lining cold air could be let in at such operations.

Heating Plant

The heating plant, which supplies 2.600 dwellings, has three parallel connected hot water boilers. The boilers are manufactured of steel plate and of the high-pressure type. Each has an oil burner in the forward assembly and to prevent flame impingement on the back wall the flame chamber has been made of extra length. The burner is of a rotating type for heavy oil, continuously controlled down to a ¼ load. The draft control is by separate dampers.

Left: Interior of the furnace—the stoker has a level grate surface comprising detachable plates installed in a carriage on wheels. Right: Rubbish is collected from dwellings in paper containers

The heat is distributed by means of hot water, which, at top load, has a temperature of 120° centigrade in the in-flow pipes and 80° centigrade in the return pipes. The static pressure in the system is about 2 ato and the circulation pumps demand point 30 m vp. The static pressure in the system is maintained by means of steam, which is generated in an electrode type steam boiler where the pressure can be varied to the desired contour independently of the measurement pressure which is responsible for the hot water temperature.

Construction

The heat culvert which distributes the hot water to the dwellings is laid out in a conventional box duct of cement with removable covers. Insulation consists to a greater part of cellular reinforced concrete, which was considered to be the best type because of its impregnability to water. In ventilation wells and on bends the pipes, however, have been insulated with rock wool mats. The pipeline expansion is overcome by means of a bellows type axial compensator. All valves and compensators are welded into the pipelines, which at the entrance to the culvert have a diameter of 300 mm. When considering the heat distribution system for dwellings much thought had to be given to the difficulty of getting rid of the heat from the rubbish burning during the summer months. Sufficient temperature differences between outgoing and return pipelines had to be maintained at top load to prevent large circulating watermasses with consequently large culvert dimensions. The accumulation of heat would occur in the entire culvert and in the warm water reservoirs, which also have a great accumulation volume. The problem has in this case been solved by means of a special connection in the subscribers' subcentral station, which, principally, means that the warm water reservoirs are connected in series with a suitable shunt damper.

The central heating plant can be operated by two men, a boiler operator and one assistant, both working only during the daytime. When the oilfired hot water boilers only are in operation the plant can operate without supervision. Such minimal operating requirements have been made possible by full instrumentation and automation. For the burning of the rubbish the in-feeding has been made automatic while, on the other hand, the burners, primary air and the grate movements are regulated by hand. If something goes wrong in the arrangement, stoppage is automatic in such a way that the in-feeding, the burner and primary air is stopped.

Automatic Alarm Systems

The heating plant hot water boilers have completely automatic oil burners. The desired number of connected boilers must, however, be chosen by the personnel. If something goes wrong in the arrangement the boilers are automatically blocked and, in addition, an alarm is sounded by means of a 'larmograph' during the time the heating plant is not manned. The cause of the alarm and the locality of any fault or breakdown can be determined by means of a code system.

Full instrumentation has been installed in the rubbish incinerator establishment so that readings can be taken of the gas temperature in several places in the furnace and in the waste heat boiler. Certain temperature instruments serve also as impulse organs for alarm and damper automation. The temperature in the furnace, for example, must not go below 800° centigrade, likewise the temperature after the waste heat boiler must not go over 400° centigrade. Instruments have also been fitted to control combustion and smoke intensity. Most of the instruments and the automatic devices are mounted on an instrument panel which is placed directly opposite the incinerator.

The Problem of Housing Densities

'New Towns the Solution'

ADDRESSING THE ANNUAL GENERAL MEETING of the Housing Centre on September 28, MR. J. R. JAMES, OBE, BA, FRGS, chief planner at the Ministry of Housing and Local Government, sought to show that the problem of providing, in the next twenty years, enough houses to meet our minimum requirements would not be solved by increasing densities in our already built-up areas, but that a better plan would be to increase densities in areas of new development outside our large cities. He thought there were more practical possibilities in the creation of more New Towns and more 'expanded' towns.

Five million was the minimum figure of new dwellings that Mr. James postulated as the requirement for England and Wales in the next twenty years. He obtained this figure by reference to past statistics of the rate of growth of obsolescence of dwellings; the expected increased demand for housing for new families due to the population 'bulge' caused by new births in 1945-47; slum clearance; abatement of overcrowding; improvement of housing standards generally and the need to provide for the mobility of people who moved to new jobs from one area to another.

'Can we afford this rate of building?' he asked. 'Between 1951 and 1961 we have been able to build on the average 250,000 new houses per annum. In one year we built over 300,000. This has been done during a period of oscillating economic fortune. There are hopes that we shall at least be able to afford this rate of growth; anything less would be socially undesirable' he added.

The Greatest Need

Mr. James proceeded to demonstrate that the greatest need for housing lay in the four largest cities—London, Birmingham, Manchester and Liverpool. In and around these cities two million new dwellings would have to be found in the next twenty years. On the controversy about densities, he disagreed with those who said the housing problem could be solved by building high blocks in the existing built-up areas of our great cities. The problem, he continued, could not be solved by increasing density in the four great cities over and above what was happening to-day.

How many of the two million dwellings required for the four cities could be put back into the built-up areas? Assuming that the densities there would remain pretty much as they were at the moment and that a good deal of sub-division of Victorian type houses with large gardens could be done, the picture that emerged was that we might be able to put back 500,000 dwellings into London, 140,000 into the West Midlands area, 106,000 into Merseyside and 200,000 into Manchester. This would give a figure of just under a million, and that meant that at least 500,000 new houses must be built in the London area without interfering with the Green Belt.

Could this figure be reduced by adopting higher densities? Mr. James referred to the LCC's 'magic figure' of 136 persons per acre and said that at present one family in five had the opportunity of living in a tall flat. Perhaps that density could be achieved by good design, but he very much doubted whether that number could be achieved.

'The simple answer to those people who would increase the densities,' he continued, 'is that people need more than just homes; they need schools, space to put their car as near as possible to their home, open space, the "little shop around the corner," playspace for children and so on. We are dealing with the total lives of people,' said Mr. James. What he would like to do was to provide 14 acres per 1,000 of population, but quite clearly this was not possible in our cities.

Mr. James, by using a blackboard, indicated by tables he had worked out, that if a minimum of 8 acres per 1,000 people was to be provided, the space to be occupied by all those things ancillary to housing which he had suggested were essential, an increase in net housing density from 159 to 222 persons per acre would save only 1.8 acres of land per 1,000 people. However, a rise in net density from 24 to 40 persons per acre would save 17 acres per 1,000 people. In an area of 50 acres, 42 would be required for the actual housing leaving 8 acres for ancillary purposes. Anything above a density of 50 people to the acre was not saving any land for agriculture. Anyone who said it was 'talking out of the back of his neck.'

He didn't think the authorities who were trying to build at high densities should be asked to build any higher. Land was so precious for housing that it should not be squandered at the rate of two, four, six or even eight houses to the acre around the Green Belt. It was these areas to which the Minister had referred in his Circular to local authorities in which he asked for higher densities.

It seemed to him inescapable that attention must be turned, as far as London was concerned, to very carefully selected towns which could be expanded. This was just the application of the very simple truths which many societies had been plugging since long before the problem reached its present proportions.

'We must look out as far as 50 to 70 miles from London if we are to meet part at least of the problem of providing the 500,000 new houses needed,' Mr. James continued. 'The expanded towns must be those which provide their own employment. Admirable work is being done in this direction by some of the "little Davids" who are co-operating with the LCC in town expansion schemes. Such a place was Thetford, where it has been decided they could take another 5,000 people. But this sort of thing, while I am full of admiration for it, cannot be the complete answer. The speed at which the new housing has to be provided is far too fast.'

The most positive way of building was by means of New Towns. But should the Government underwrite the financing of more New Towns in the south, which had much the best housing in the country? The North's new schemes of a similar character were still only being talked about, in the main.

Obituary

Sir William Reid Dick; Hugh Cecil Ford

THE DEATH OCCURRED on October 1 of Sir William Reid Dick, KCVO, RA. He was 82.

A sculptor of many national memorials Sir William Reid Dick contributed a wide variety of work, including portraiture and architectural sculpture. He was born in Glasgow on January 13, 1879, and studied at the Glasgow School of Art and in London. He first exhibited at the Royal Academy in 1908, was elected ARA in 1921 and became a Royal Academician seven years later. In 1933 he was elected president of the Royal Society of British Sculptors, having been awarded the silver medal of the society in 1928.

Dick's most controversial work was the National Memorial to King George V at Westminster, for which Sir Giles Gilbert, RA, designed the architectural setting. Of King George V Dick also executed several portraits, including the recumbent effigy for the tomb in St. George's Chapel, Windsor. His early career was marked by such works as 'Man Child' and the study of a woman and serpent called 'Femina Victrix' which was purchased by the National Gallery of New South Wales. Among his architectural works were the horse sculptures entitled 'Controlled Energy' over the east and west entrance to Unilever House, Blackfriars, London, which he executed in 1932; and a certain amount of decorative work, including figures on Selfridge's and other business premises in London. One of his most successful later works was the memorial statue to President Roosevelt in Grosvenor-square.

Dick was created KCVO in 1935 and in 1938 he became a member of the Royal Fine Art Commission. He was awarded the Albert Medal of the Royal Society of Arts in 1948.

Hugh Cecil Ford

WE REGRET to record the death (which took place in Eastbourne on September 17) of Mr. Hugh Cecil Ford. He was 62, and was senior partner of the firm of Mitchell & Ford, architects and surveyors, founded over 50 years ago by his father. (The late Mr. H. C. Ford had no connection with Mr. H. Hubbard Ford, FRIBA, JP, also of Eastbourne, who is alive and engaged in an extensive practice in the area.)

West Sussex Planners Criticised

'Ridiculous Modifications' Called for in Design

MR. S. H. J. ROTH, JP, FRIBA, West Sussex architect and an outspoken critic of planning in that county, has commented on the recent decision of Tesco Stores Ltd. to build the front of their £100,000 supermarket in Chichester without planning permission. 'Nobody connected with the building industry,' said Mr. Roth, 'will be surprised that Tesco has lost patience with the planners.'

The supermarket firm first submitted a front elevation plan to Chichester City Council's planning committee early this year. This was rejected, as were a number of other plans, until eventually a meeting was arranged between Tesco representatives and the planners. The meeting, however, ended in deadlock and almost immediately Tesco ordered their builders to erect the frontage. Thus, for the first time in a large scale project in West Sussex, the planners were openly defied. 'Big business just cannot afford to wait,' commented a Tesco spokesman.

'Peculiar Planning Control'

'It is well known,' went on Mr. Roth, 'that planning control is administered in a peculiar manner in West Sussex and it is most difficult to get any large scheme through the planning department. In Chichester, it has taken two and a half years and two planning inquiries to get plans passed for a new Barclays Bank. At first the planning authorities wanted a contemporary building, but the final approval was for one of traditional design. It took Sainsburys nearly nine months to get planning approval for a contemporary building because the planners wanted something more traditional. Finally, they required so many modifications that much of the freshness of the design was killed. Messrs. Stead and Simpson have been having trouble with plans for their new shoe shop for months: and the Co-operative Stores have been having planning difficulties for two years. Planning approval for Woolworth's new building took eighteen months.'

Panel of Architects Blamed

Tesco's defiance of the planners has been described as the latest and most spectacular of a long series of planning events which have characterised the recent existence of the city's planning committee. Mr. Roth stated that whatever way the building industry turned in West Sussex it was hampered by the planners. 'Planning in this county is not going to be put right until there is a complete overhaul of planning control —as distinct from town planning,' he added, blaming much of the trouble on the panel of architects set up in West Sussex to advise on design.

'Ridiculous modifications and changes are called for in design,' he went on, 'ruining the idea which the architect has striven for originally. The actions of the architects' panel, as interpreted by council officials, are causing considerable unrest among the architects of the county. Big firms cannot afford to wait months or even years in a competitive age and often take the easy way out by accepting unnecessary alterations in their plans. In this way they are able to get on with the job but the result is often second-best architecture caused directly by the planners.'

An Official View

A Chichester city spokesman said that the only thing that could be said at the moment was that the firm had not received planning permission for the front elevation and that the planning committee had not discussed the present position because it had not been placed before them. Tesco is to appeal to the Minister of Town and Country Planning against the committee's rejection of its plans.

Housing Progress Report

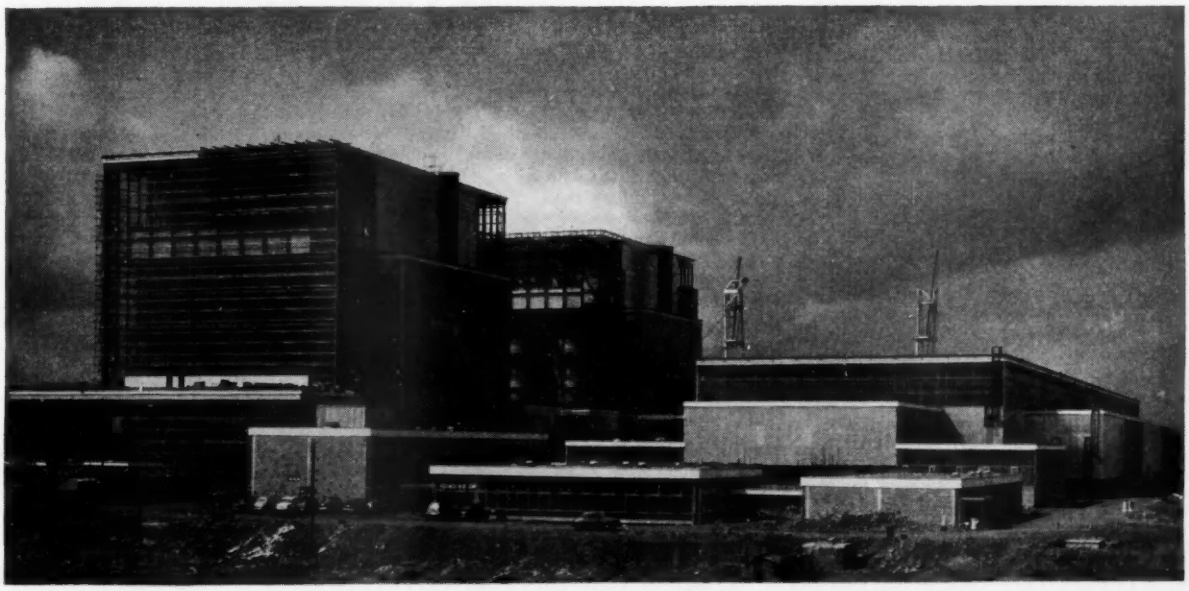
Completions During August

THE HOUSING SUMMARY presented to Parliament as a White Paper* jointly by the Minister of Housing and Local Government and the Secretary of State for Scotland, shows that the number of permanent houses completed in Great Britain during August was 23,549 compared with 24,330 in August, 1960. Of these, private builders were responsible for 14,923 and public authorities for 8,626.

In the first eight months of 1961, 192,003 permanent houses were completed compared with 192,249 in the same period of 1960.

* Cmnd. 1491 Housing Summary, August 31, 1961. HMSO, price 3d.

HINKLEY POINT NUCLEAR POWER STATION.—*Good progress has been made in the building of the 500 megawatt nuclear power station at Hinkley Point in Somerset, which is being constructed for the Central Electricity Generating Board by the English Electric, Babcock & Wilcox, Taylor Woodrow Atomic Power Group. Below, the two reactor buildings can be seen from the seaward side. Fuel loading of No. 1 reactor (on the left) is expected to begin in the spring of 1963. The 740 ft. long turbine hall is on the right of the picture and in the foreground are the permanent administrative blocks. The consulting architect was Mr. Frederick Gibberd, CBE, ARA, FRIBA.*



Hospital Casualty and Accident Services

Department of Health Planning Note

A REPORT by the Department of Health for Scotland on the provision and design of casualty and accident departments, published by HM Stationery Office on September 25 (price 4s.), is aimed at assisting hospital authorities, medical planners and architects planning new casualty and accident departments. It presents the interim conclusions reached as the result of detailed studies, including surveys of a number of casualty departments throughout the United Kingdom, by the hospital development unit and the work study group of the Department of Health. This is one of a series of planning notes being issued to hospital authorities in Scotland.

A great deal of consideration is being given now in many places to the best methods of providing casualty and accident services in hospitals. The note reflects recent thought about the development of these services and the design of departments. It has also been influenced by the discussions which the Department's working group had with consultants and others.

Pending the reports of the committees of the health services councils, which are at present reviewing casualty and accident services, certain assumptions of interim policy had to be made, among which were: (1) Casualty and accident services will be concentrated so far as is practicable at general hospitals each serving a population of at least 250,000; (2) the casualty and accident department will be primarily concerned with the treatment of traumatic and accident cases and acute surgical and medical emergencies. It will undertake the reception, resuscitation and primary treatment of patients admitted in emergency who require the special services of the department. It will undertake the treatment of patients who require hospital services urgently as the result of minor injury or illness but who do not require admission. It will not undertake the treatment of patients who do not require hospital facilities; and (3) the department will be in charge of a consultant general or orthopaedic surgeon and there will be 24-hour consultant cover.

Deficiencies Observed

The detailed studies were designed to assess the staff and facilities required to deal with a given load of casualty work and the accommodation required. The percentages of patients requiring various sequences of treatment were ascertained to determine a layout for the department which would save unnecessary movement by patients and staff. In the course of these detailed studies in existing departments some deficiencies in the present services were observed. These included lack of adequate medical staff and of established policy and procedures for the proper treatment of casualties, as well as deficiencies in accommodation and facilities of various kinds.

The note recommends that the subdivision of accommodation in the department should be kept to the minimum so long as treatment is not prejudiced. Recommended divisions of accommodation, however, are: (1) Separate examination/treatment rooms for individual patients; (2) separation of serious from minor injuries from reception onwards; (3) separation of clean wounds from septic conditions at most stages of treatment; (4) separate accommodation to be provided for injuries of different types only when doctors of different specialities are working regularly in the department, and taking a considerable proportion of the load; (5) separate waiting accommodation for adults and children; and (6) special rooms for certain specific purposes, e.g., waiting, resuscitation.

The Note recommends that the layout should be based on a quantitative analysis of the work to be done. It contains estimates of the staff required for departments having 50, 100 and 150 new patients a day with the number of return visits either equal to or one and a half times the number of initial visits. The accommodation required is then deduced from the estimates. The studies are continuing and it is proposed to issue a further note in due course.

Hospital Building Contracts

Fixed Price Tendering

THE MINISTRY OF HEALTH on September 27 circulated a memorandum (number HM ((61) 99) drawing the attention of regional boards and hospital management committees to the conditions necessary to the success of the policy of fixed price tendering, including the desirability of accepting tenders within two months of their submission.

In 1957 the Ministry asked the hospital boards and committees to invite tenders on a fixed price basis without the inclusion of cost variation clauses for labour and materials, for all works of building and civil engineering, irrespective of size, provided that they had been thoroughly planned in advance and that the estimated contract period was not more than two years.

In the new memorandum the Minister points out that the following conditions are essential to the success of the policy of fixed price tendering:

(i) Works must be fully planned before tenders are invited and accurate drawings and bills of quantities must be available at tender stage;

(ii) There must be no undue delay in accepting tenders. The Minister considers that fixed price tenders should not generally be regarded as open for acceptance for more than two months, and boards and committees are asked to ensure that their arrangements enable this time limit to be observed. The Minister is taking special steps to avoid delay in the consideration of tenders submitted by boards for his agreement; and

(iii) Variations in the works after the contract has been let must be cut to a minimum and, if possible, avoided entirely.

Social Life in New Towns

Low Density and Loneliness

TWO PASSAGES in the Report of the Ministry of Housing and Local Government for 1960 ('The Builder' of August 25), one of them inexcusably mischievous and the other just plain silly, mar an otherwise really excellent and valuable account of the progress of the twelve new towns in England and Wales; according to an editorial in the September issue of 'Town and Country Planning.'

'A phrase like "new town blues," used in the report,' the editorial continues, 'is grossly misleading, since it seems to imply that isolation or loneliness is specially characteristic of new towns, of which there is no evidence.

'The surmise in the Ministry's report that the relatively open residential layout of the new towns is adverse to sociability and community feeling has, in our experience, no foundation whatever. It is of course a fashionable view among people who want others to live at high density to "save land" or to titivate their own peculiar love of "enclosure".'

The editorial points out that there would be no sense in taking people from congested centres and crowding them elsewhere at densities only slightly less. The possible 'saving' of land by this expedient would be trifling, and by resorting to it the Ministry would increase the number of better-off people who would, with the aid of building societies, escape into country areas (and green belts) at much lower densities. New towns were not wanted as compounds for the under-privileged.

'We find it impossible,' the editorial concludes, 'to avoid the suspicion that by this fallacious hypothesis of a connection between high density and neighbourliness the Ministry is trying to justify its failure to designate a sufficient number of sites for further new towns, and its intention to compress inordinately the few that it proposes, as well as housing developments generally.'

Public Health Engineering

New Diploma Award Through ICE Examinations

THE Institution of Public Health Engineers have introduced a new Diploma in public health engineering. By mutual agreement, arrangements have been made for candidates for this award to qualify academically through the examinations of the Institution of Civil Engineers.

The ICE will sponsor public health candidates in the Engineering Institution Part I examination, which is administered by nine professional engineering bodies.

Candidates for the new Diploma will be required to pass Group A of Part II of the ICE examination which includes specialist public health subjects.

To obtain the Diploma candidates will also have to pass the Professional Interview of the IPHE which has been modelled on that of the ICE. Details of the new Diploma are as follows:

Appendix

(A) (i) Arrangements have been made whereby candidates for the Institution of Public Health Engineers' Diploma Examination approved by that Institution will be sponsored by the Institution of Civil Engineers in the Engineering Institutions' Examination, Part I.

(ii) Part II of the examination for the IPEH Diploma contains subjects of a more specialised character and following discussions between the two Institutions, the ICE have remodelled Group A of their own Part II Examination.

(iii) In October, 1962, and subsequently, this Group has been extended to include optional papers in the following Public Health Engineering subjects:

Sewerage and the Disposal of Sewage and Trade Wastes.
Water Supply and Treatment.
Sanitation of Buildings.
Lighting, Heating and Ventilation.

(iv) Candidates who are qualified in Part I (A and B) and who also pass Part II group A of the ICE Examination in and after October, 1962, will, provided they have satisfied the examiners in two of the subjects listed in (iii) above, be awarded the Diploma of the IPHE after passing the Professional Interview of that Institution. Candidates must also comply with the Regulations of the IPHE.

(v) Candidates approved by the IPHE who are qualified in Part II Group A of the ICE Examination (with the proviso that prior to October, 1962, they obtain a pass in the subject Hydraulics) and who take two endorsement subjects from those listed in (iii) above in October, 1962, and subsequently, will be awarded the Diploma of the IPHE after passing the Professional Interview of that Institution with whose Regulations they must comply.

(vi) *Subject* to the above with effect from and including October, 1962, members of the IPHE who hold the Diploma of that Institution will be qualified in the ICE Examination and subject to compliance with the by-laws of the ICE may proceed to the Professional Interview of that Institution.

(vii) *Copies* of the Rules and Syllabus for the ICE Institution of Civil Engineers' Examination and of the Institution of Public Health Engineers' Diploma Examination together with specimen question papers may be obtained from the Secretary of either Institution.

(B) *That* the Institution of Public Health Engineers be invited to nominate a representative on the Board of Moderators of the ICE.

Increased Output of British Standards

The Needs of Industry

AT THE annual general meeting on September 27 of the British Standards Institution, Mr. Geoffrey Cunliffe, managing director of Norcros Ltd., was elected president in succession to Mr. R. E. Huffam. Mr. Cunliffe had earlier been elected chairman of the general council. Tributes were paid to Mr. Huffam for his three years' service as president of BSI and chairman of its general council. He was elected a deputy-president. Sir Herbert Manzoni, CBE, PICE, MTPI (city engineer of Birmingham), and Mr. John Ryan (vice-chairman, Metal Box Co. Ltd.) were re-elected deputy-presidents. Also announced was the appointment of Sir Anthony H. M. Bowlby as chairman of the Institution's engineering divisional council in succession to Sir Stanley Rawson, whose term of office had expired.

The year 1960-61 was another year of record activity and output. For the first time, the number of new and revised standards published topped the 300 mark and sales rose to 1,158,000 compared with the previous year's record figure of 1,097,000. International standards activities made increasing demands and so did work on testing and approval of products. There was also a sharp increase in the amount of new work. During the presentation of the annual report it was said that if increased resources were not forthcoming to enable the BSI efficiently to meet the demands made upon it a much more rigorous system of priorities might have to be introduced, possibly with special emphasis on the needs of the major exporting industries.

The increasing scale of international standards work and the importance of Britain playing a full part in it was stressed. It was likely that activity in connection with unification of standards in western Europe would expand, particularly if the United Kingdom entered the Common Market.

Another feature of the past year had been the growing efforts to help in the efficient application of standards in individual firms. The BSI's main task of preparing standards could only be carried out effectively if the Institution was in close touch with the standards departments of manufacturing firms and large purchasers. The establishment of a 'Register of Standards Associates' had provided a useful link and had also made easier the exchange of information and experience among those responsible for the standards policy and procedures in individual firms.

The Building Division

The building division had added considerably to its programme, both in the revision of existing standards and in undertaking new projects such as those for sprayed absestos insulation, prefabricated plaster panels, cork floor tiles and other cork products. There was unfortunately no agreement in the building industry on the module to be adopted for dimensional co-ordination but some progress was being made on tolerances and fits for building which might ultimately help the solution of the module problem.

Among the interesting codes being developed under the Council for Codes of Practice were those for precautions against fire in all types of buildings, for protection of steel against corrosion, for composite construction in steel and reinforced concrete, and for the earthing of all types of electrical equipment.

Those elected to serve on the Institution's general council included Mr. E. J. Cook, BSc, MICE, FIOB (Richard Costain Ltd.), Mr. H. A. Pursey (Turners Asbestos Cement Co. Ltd.), and Mr. J. B. Storey (Ipswich town council) from the building division; and Mr. H. H. Clark, FRIBA (Royal Institute of British Architects), and Mr. C. E. Kemt (Institution of Structural Engineers) from the Council for Codes of Practice.

Northern Ireland Housing Subsidy

Immediate Increase Announced

THE NORTHERN IRELAND GOVERNMENT has announced an increase in housing subsidies at the rate of £13 10s. a year for a house of 800 sq. ft. with proportional variations for larger and smaller houses. This subsidy, which is in addition to one of £8 on the basic level announced recently will apply to every public authority house started between July 1 of this year and June 30 next, and which is completed on or before March 31, 1963. It is designed to help housing authorities to maintain their present level of completions and to make further plans for 1962 and 1963.

A housing subsidy Order giving effect to these proposals, and to the £8 addition to the basic subsidy will be laid before Parliament when it meets in October. The increase raises the housing subsidy to £70 10s.

To encourage local authorities to extend their work on the introduction and improvement of water supplies, the Government is also to increase grants by 15 per cent on schemes costing up to about £15,000.

London County Council

Direct Labour Costs

AT THE MEETING of the London County Council on October 3, the Housing Committee submitted details of the final costs of seven schemes for new dwellings (total £437,791) and six for modernisation of obsolescent dwellings or conversion of drying rooms, etc. (total £168,048), all carried out by direct labour.

Three of the schemes for new dwellings show an excess over estimates of £17,109; the other four show total savings of £14,076 leaving a net excess of £3,033. The largest excess, £15,917 at Clapham Park estate over a £99,570 estimate made in 1955, is attributable largely to increased costs of labour and materials (£5,842) and additional works (£8,288).

Only one of the modernisation or conversion schemes shows an excess cost over estimates (£4,328 over a £46,005 estimate made in 1955 for the modernisation of Sunbury Buildings, Boundary Street estate, Bethnal Green); the other five schemes show total savings of £5,182, resulting in a net saving of £854 for the six schemes.

Means of Escape in Case of Fire

IN CONNECTION with the Council's experimental programme of inspection of means of escape in areas of high fire risk, nearly 12,000 inspections have now been made. Of some 2,400 buildings surveyed, it was found necessary in about 1,770 cases to stipulate that work for better means of escape and fire precautions should be carried out; the work has been completed in about 780 cases so far. In only 290 cases was no action found necessary. The greater part of the Soho and Shoreditch areas and substantial parts of North Kensington, South Paddington, West Islington and Stepney have been surveyed, and much worthwhile work has been done not only in making many premises safer for the occupiers, but also in demonstrating the possibility of economic provision of means of escape in older premises.

In addition to survey work a considerable amount of publicity work has been undertaken and has proved valuable in increasing interest and concern in the provision of satisfactory means of escape in premises in multiple occupation.

Hitherto there have not been any intensive inspections in areas south of the river, but there appears to have been a deterioration in living conditions in part of the Brixton area of Lambeth, and the Council has decided that this should be the next area to be dealt with in the survey as and when staff is available. It has also been decided to continue the survey indefinitely and to extend it to any danger spot which may be brought to the Council's notice.

Mortgage Rates Go Up

THE FINANCE COMMITTEE reported that, if the Minister of Housing and Local Government agreed, the charges which the Council made to the public for loans for house purchase, etc., will be increased. Survey and reinspection fees will go up and the interest rates to borrowers will go up by ¼ per cent to ¾ per cent above the rate currently in force for loans to local authorities from the Public Works Loans Board. Current interest rates on advances by the Council will therefore be 7¼ per cent for up to 15 years and 7¾ per cent for 20 years.

The cost of loans by the Council will be higher than that for loans from the majority of building societies and other local authorities because many of its loans are made on properties which building societies and other local authorities usually consider unsuitable for advances and owing to their age and condition a more searching and thorough examination is necessary—also the Council's income test is less exacting than that of other lenders.

Some local authorities in London have, owing to the economic situation, been obliged to suspend or limit their schemes for loans for house purchase. For the time being no loans will be advanced by the Council on any property in the areas of such authorities unless the applications are from the Council's tenants, persons on the Council's waiting list, people living in property which the Council is proposing to acquire or from London residents wishing to move to a new town or to an expanding town with which the Council has an agreement.

Fletton Bricks Cheaper

Reduction of 2s. Per Thousand

THE London Brick Co. Ltd. announce that as from October 1 the price of their common, cellular common and keyed bricks has been reduced by 2s. per thousand. This reduction applies to current orders and outstanding quotations for these types of bricks.

Last May, when referring to the prospects for the current year, MR. A. T. WORBOYS, the chairman, stated that the company was working at full capacity and was now reaping the benefits of recent extensions. Mr. Worboys has made no secret of the fact that it has long been his ambition to pass on, wherever possible, some of the benefits of increased production and efficiency by way of a reduction in the price of bricks. Benefits resulting from higher productivity and increased efficiency throughout every field of the company's operations have now made it possible for the company to reduce prices.

Fletton common brickwork, it is claimed, is still the cheapest form of load-bearing construction in this country and London Brick Company Ltd. are by far the largest suppliers of common bricks to the building industry. Mr. Worboys' announcement comes at a time when the demand for the company's products still greatly exceeds its production and this reduction in price will be generally welcomed as a deflationary step—a move in the right direction.

Wiltshire Cement Works

Development Approved

THE BUILDING of a £3m. cement works at Westbury in Wiltshire, by Associated Portland Cement Manufacturers, has been approved by the Minister of Housing and Local Government after the third public inquiry since 1947. The Minister has approved plans for the layout and works, in spite of objection by the Wiltshire County Council that these envisaged as much as treble the permitted rate of production originally planned.

Certain conditions have been imposed, but the company has already stated that it is ready to accept them. The principal conditions are that an approved tree planting scheme shields the works, both from the town and from the White Horse; that demolition of the works is carried out when the supply of chalk is exhausted; and that new plans are submitted before any extensions to the building or plant can be undertaken.

Work has already started at the site on minor buildings and service roads. The scheme envisages the excavation of chalk close to the White Horse. This will be carried by underground pipeline to the factory in the valley below, where another large excavation will supply the clay. The site of the factory with a 250 ft. chimney is alongside the clay working, close to the main Paddington to the west railway line. There was considerable opposition to the works and some 30 objectors gave evidence at the last public inquiry in July.

Misuse of Tipper Facilities

The Incidence of Inexperienced Hauliers

FROM A CORRESPONDENT

A NUMBER of reports are circulating concerning some large building and civil engineering contracts where personnel have failed to engage suitably licensed tipper vehicles. Spot checks have revealed tippers being run by drivers who had never applied for a carrier's licence. In certain cases a number of the registered owners of vehicles had only lodging house addresses. They appear to have virtually no fixed abode. Other cases have come to light where tipper owners have been of foreign origin with scant knowledge of British law and customs.

The tempo of building work during the past year or so has encouraged some inexperienced men to take up haulage work on some major contracts. The temptation to employ the unlicensed or the cut-rate haulier whose standing and background is unknown, should be resisted. Traffic licensing authorities are maintaining an increasing watch in these matters and some contractors' representatives may find themselves summoned to appear as witnesses in traffic courts if they do not employ licensed hauliers.

Heating Systems at HEVAC Exhibition

Evidence of Growing Demand

THE POTENTIALITIES of the heating, ventilating and air conditioning industry were emphasised by MR. C. J. ATKINS, MI.PLANT.E, at the opening of the Hevac exhibition at Olympia on September 26. Board of Trade figures, he said, which were not really comprehensive when related to the industry as a whole, showed that output in 1958 amounted to approximately £30 million, 10 per cent of which was exports. Up until last year this total figure increased by 23 per cent and Mr. Atkins estimated that this year it would reach about £50 million.

A large part of the equipment at the exhibition is connected with industry and there is a growing concern with industrial air treatment such as dust, grit and fume collection. Nevertheless it is in domestic heating that one can see the greatest advances. When a whole house can be warmed by a boiler that uses less coal equivalent—whether in the form of solid fuel, gas, electricity or oil—than is consumed by a single old-style drawing room fire, it is not surprising to find the Gas Council reporting that installations of domestic gas central heating and warm-air heating units have doubled since last year. A similar trend is reported by other fuel-equipment manufacturers, and there is good reason for thinking that this geometric progression in demand will continue.

Automatic Heating in USA Homes

The USA, which is much more advanced in this field than Europe, provides a reasonable guide and some 1960 statistics show that 49 per cent of American homes using all fuels are equipped with automatic heating. Not unexpectedly then, much of the equipment to be seen at the exhibition has its origin in America, such as the forced warmed air heating system presented by JOHNSON AND STARLEY LTD., of Bedford-road, Northampton. Here, air is cleaned and heated in oil furnaces, ranging from 32,000 to 200,000 btu, and ducted under floor to be distributed round the house. The system is automatically controlled within close limits and can change its output as quickly as the weather. As it is widely used in Canada, where temperature variation is considerable, the less variable British climate should not present a problem.

Two more warm air systems are illustrated by THE GAS COUNCIL. One is a very compact unit which is installed in a small compartment. From the heater, short ducts lead to two or more outlet grilles in the sides of the compartment. In this way the unit is easily installed to enable adjacent rooms to be warmed through the grilles. In a two-storey house, short extension ducts can be fitted on top of the compartment to take air to extra grilles in the bedrooms. With this system one can *select* the rooms to be heated; for instance, all the heat can be turned into one room for a time or it can be divided between two or more rooms.

A second warm air system operates by heating hot water with circulation pipes taken to a heat exchanger in the roof space. Ducts run from the roof space to outlet grilles near the floor of the various rooms, and an air inlet grille is fitted at a higher level in each room to bring the air back to the heat exchanger. An advantage of this system over direct air heating is that a domestic hot water supply is available from it.

Air Heating and Cooling

The largest stand of the exhibition has been taken by the BIDDLE GROUP OF COMPANIES, 16 Upper Grosvenor-street, London, W1, which is showing a wide range of air heating and cooling equipment. One of the new products featured on this stand is the 'Blendaire' attenuator, which is used for high velocity dual duct air conditioning systems. Within a single cabinet size, the unit provides a wide selection of mixed air capacities and gives an air volume range of 150-500 cu. ft. per minute. Each air inlet is controlled through the movement of the room thermostat.

An international research and patent development centre in Zurich, STRAMAX AKTIENGESELLSCHAFT makes its first appearance at an international exhibition. 'Stramax' is a world-wide patented heating and cooling system, fitted in ceiling and wall surfaces. More than one million square metres of radiant ceiling heating have been installed, the firm states, in more than a dozen countries. Newly developed and shown for the first time at Olympia is a heating and cooling system using prefabricated non-inflammable tiles which can be combined with air conditioning, lighting and sound absorbing structures. These are produced in a variety of decorative ceiling finishes.

Ceilings which can be heated or cooled and which are sound-absorbent are also the specialities of FRENGER CEILINGS LTD., 7-12 Tavistock-square, London, WC1. These present a form of heating, in which aluminium panels clip on to hot water or electrically heated pipe coils, that occupies no floor area and which rapidly responds to temperature control. The Shell Centre, London, is being equipped throughout with 1m. square feet of Frenger ceilings. Of particular interest is the fact that, during the summer, chilled water will be circulated through the system and will take approximately 50 per cent off the load of the central air conditioning plant. At Olympia, Frenger are showing several new ceiling panels and also a new and rapidly assembled industrial radiant strip.

In the more conventional type of central heating, STEEL RADIATORS LTD., of Southall, Middlesex, exhibits some novel radiators which are produced by a special welding process. They are said to give up to 100 per cent more heating surface per foot run than a panel radiator of similar height. The company produces central heating radiators of both column and panel types which are made in various standard heights but can be 'tailored' in length to suit individual requirements. Another product is 'Stelelectrics,' oil-filled electric radiators of column or panel type, thermostatically controlled.

An automatic sequence control system which can be used to ignite a boiler or warm air heater, bring it up to correct operating conditions and then control it, is presented for the first time by PERL CONTROLS LTD., of Crawley, Sussex. Domestic central heating equipment can be installed anywhere inside or outside the house with a single 'on-off' switch control, placed wherever it is most convenient.

HATTERSLEY (ORMSKIRK) LTD., of Ormskirk, Lancashire, are showing a fingertip central heating regulator which, like the control of an electric cooker, can be set to the required heat. For domestic radiator control, the regulator has the advantage that it gives a tight shut-off without requiring the extra force needed with the conventional screw-down valve. A quarter turn of the control head gives adjustment from fully closed to fully open.

Industrial Equipment

On the industrial side, much of the equipment introduced, speeded perhaps by the Clean Air Act, is designed to eliminate air pollution. One interesting exhibit which was being seen for the first time in this country is the 'Venturi' scrubber which will remove sub-micron particles from waste gases by a double scrubbing action. This consists of a multiple bank of standard venturis with a specially-shaped entry which compels the gas to pass through two complete cones of water. Variation of the water droplet size permits a very efficient collection of the dust particles in the gas. At Olympia, a Perspex quarter scale working model of the system is shown by AMBUCO LTD., 2-5 Old Bond-street, London, W1.

CLEANAIR LTD., of Leighton Buzzard, Beds., who specialise in the production of wet and dry dust separators and special purpose plant for extracting corrosive fumes are showing a new high efficient wet separator. This operates at 8,000 cu. ft. per min. and is designed to collect fine-particle dust under suction. The main feature here is an unusually low internal resistance or pressure drop across the unit of 2 in. This would allow the use of a fan having a forward multivane, backward bladed or aerofoil impellor, any of which absorb a lower brake horse power than a conventional radial bladed type.

A new automatic pressure valve which can be used either in an automatic fuel control system or to give warning signals to the staff, was prepared in time for the exhibition by ATLANTIC DISTRIBUTION INDUSTRIES (G. A. Walsh) of 85 Carnwarth-road, London, SW6. As well as industrial applications, the valve has potential use as a safety device on domestic boilers.

The firm whose fans are used to air-condition the Houses of Parliament, DAVIDSON AND CO. LTD., of Belfast, demon-

strate the latest design of 'Sirocco' air conditioning plant. An interesting development in Davidson equipment is a method of steam humidifying, particularly valuable for use in surgical operating theatres and biological laboratories where sterile atmospheric conditions are required.

ISOPAD LTD., of Boreham Wood, Herts., show their latest development in flexible heating tapes, a metal-sheathed heating element mounted on stainless steel mesh instead of the usual glass cloth or quartz cloth carrier. It is suitable for temperatures up to 600 degs. C. The firm illustrate heating tapes varying from 5 Watts per foot loading for frost protection, to 70 Watts per foot for high temperature operation. Metal-sheathed elements for use in flameproof situations are mineral insulated terminating in flameproof glands for fitting into junction boxes.

An automatic electrical control system which can be used on the smallest of boilers is shown for the first time by JAMES GORDON AND CO. LTD., of Stanmore, Middlesex. It is a development of the firm's many years of experience in the automatic control of large units and offers the same advantages of improved operation and fuel economy.

A packaged steam generator, the 'Vaporax,' produced by the WANSON CO. LTD., of Boreham Wood, Herts., and designed to augment existing steam supplies, is another 'first time' exhibit at Olympia. There are two models, with maximum steam output of 220 lb. and 660 lb. The Vaporax is small and compact, taking up little floor space. It is automatic in operation and easy to operate and combines high efficiency with low running and maintenance costs. The machine at Olympia, one of the smaller models, came from the Brussels headquarters of the International Wanson Organisation. To conform to British standards certain modifications will be made before it is manufactured in this country. Production is expected to begin later this year, with initial deliveries in the spring of 1962.

The same firm are also showing 'Thermoblocs,' used to heat any kind of building to an even, pre-determined temperature. The Thermobloc operates automatically. A thermostat starts the burner when heat is required and, when the temperature at the heat exchanger reaches the pre-set value, the air circulating fan starts. When the correct working temperature has been reached, the burner is extinguished, but the fan continues until all the heat has been taken from the heat exchanger. The installation generally uses a high-pressure atomising oil burner but it can be adapted for coal or gas.

In conjunction with the exhibition an international conference on heating, ventilating and air conditioning was held from Sept. 27 to Oct. 4. This event was honoured by the patronage of the Duke of Edinburgh. It was presented by the Institution of Heating and Ventilating Engineers in co-operation with the Association of Heating, Ventilating and Domestic Engineering Employers and the Heating and Ventilating Research Association. The exhibition closes today, October 6, at 4 p.m.

Architects' Visit to Manchester

The Building Centre Viewed

MORE THAN one hundred and sixty architects visited Manchester on September 9 to see the Manchester Building Centre, now just twelve months old, the Co-operative Insurance Society's office block in Miller-street, now nearing completion, and the Courts of Justice recently opened by HM the Queen. The party consisted of presidents and members of all the architectural societies in the region.

They were welcomed at the Manchester Building Centre by its Director, Mr. John P. Griffiths, ARIBA, who explained briefly the several ways in which the centre could be of service to them, even though they were normally at some distance from Manchester. He stressed the use which they could make of the information service by letter, telephone and telephone answering machine, the latter enabling them to call the centre during the cheap rate periods. He also invited them to make full use of the growing number of exhibits and mentioned that the centre had now started a brick library and it was hoped that soon a large selection would be on show so that architects and their clients could see and compare the different types available.

Technical Education

Manchester Programme

VARIOUS post-advanced lectures have been arranged by the Manchester and District Advisory Council for Further Education to be held at the Royal College of Advanced Technology, Salford, and at the College of Science and Technology, Manchester. Three courses are to be held at Salford; the first of these will be a two-day course of lectures on 'Doubly Curved Shells,' to be held on April 5 and 6, 1962 (fee £1 11s. 6d.). Full details and application forms may be obtained from the Registrar at the college for a course entitled 'Composite Action in Steel and Concrete.' A two-day course is to be held in May for Public Health Inspectors and others entitled 'The Measurement of Atmospheric Pollution,' (fee £1 11s. 6d.).

The first of the five courses at Manchester will be a course of 12 lectures on Monday evenings commencing October 23 (fee £4), dealing with 'Application of Computers to Civil Engineering.' 'Prestressed and Reinforced Concrete' will be the subject of a course on 24 Monday evenings from October 16 (fee £3 3s.). A two-day course of lectures will be held on January 11 and 12 from 9 a.m. to 5.30 p.m. on the 'Problems of Radioactivity at Water and Sewerage Works,' (fee £7, including lunches and refreshments). Details of a series of evening lectures to be held in the spring term on the 'Renovation of Dilapidated Buildings' will be available from the Registrar at the college early in 1962. A short course of one week's duration is planned for September, 1962, entitled 'River Control and Coastal Defence Work,' for which details will be available from the Registrar in May.

Completion of Blackburn Cathedral

IN A SERMON at the institution, induction and installation of the new Provost of Blackburn recently, the Bishop, the Right Rev. C. R. Claxton, outlining plans for the completion of the cathedral said: 'The first need is to seek out and appoint the best architect we can find in the country to inspire, supervise, and guide this work.' He added that there was no need to enlarge the seating capacity but it was necessary to complete the exterior and to 'deal with the tower and beautify the interior.'

Basic Materials

Figures Remain Stable

PROVISIONAL INDEX NUMBERS for August show that prices of goods produced by the manufacturing industry and costs of materials and fuel used were generally higher. The figure for materials used in building and civil engineering remains at the July figure of 151.7 (based on 100 for June 30, 1949), and house building materials are also stable at 153.2.

Commodity	Aug., 1960	July, 1961	Aug., 1961
Coal	132·1	142·5*	142·5*
Slates	139·2	141·1	141·1
Refractory goods, including bricks	128·7	129·4*	129·4*
Non-refractory goods, including bricks	115·2	122·1*	122·1*
Building bricks, common, other than fletton, ex-works	117·9	123·9	123·9*
Building bricks, fletton common, delivered	108·7	117·5	117·5
Glass (other than containers)	121·5	123·4	123·4*
Cement, delivered	113·2	119·9	120·0
Cast stone and cast concrete products	103·4	104·8	104·8*
Synthetic resins and plastic materials	88·4	85·3	85·1
Paint for building and decorating	108·2	110·6*	110·6*
Steel sheets	126·5	127·4	127·2
Aluminium and aluminium alloy products (extruded and drawn)	129·8	132·3	132·3
Galvanised cisterns, tanks and cylinders	126·9	132·9	132·9
Home-grown hardwood ...	95·2	98·2	101·6
Wallpaper	119·8	123·5	123·5
Aluminium, virgin ingot, delivered	119·2	119·2	119·2
Copper, ex-ship, wharf or warehouse	98·6	92·4	92·9
Lead, ex-ship, wharf or warehouse	73·6	67·2	67·1
Zinc, ex-ship, wharf or warehouse	111·7	99·5	97·7
Imported hardwood (ex-yard or wharf)	111·2	112·2*	112·0*
Imported plywood (delivered to consumers)	97·7	98·7	98·7
Imported softwood (delivered to consumers)	106·8	107·7	107·6

* Provisional.

The IUA Congress

Professor Matthew Sums Up

A Review of the IUA Congress was given to a recent Council meeting of the RIBA by Professor Robert Matthew, CBE, ARIBA (chairman of the Congress Committee, and recently elected President of the International Union of Architects). Following are some of the points he made :

'THE CONGRESS COMMITTEE, on whose behalf I am now reporting, has been in existence for nearly three years. It was set up shortly after the 5th Congress in Moscow. I hope a formal report, including the final accounts, will be ready for the October Council Meeting.

'Meanwhile, while it is still fresh in our minds, I would like briefly to give you the substance of the reports we had at our meeting on July 24.

'I would remind you that, in addition to the Congress itself, the Assembly of the Union—the official delegates of the member countries—about 80 delegates—also held its meeting, a few days before. At this meeting the general policy of the IUA was discussed, the programme of the working commissions reviewed, new member countries (four of these—Ghana, Peru, South Africa and Austria) were accepted, the budget was approved; the theme of the next (7th) Congress in Cuba, in 1963, was also approved; and finally the new officers and executive elected.

'All this happened before the Congress started, and, in addition, meetings were arranged and held in London by five out of the nine working commissions, and on the Saturday after the Congress finished the new Executive Committee held a full day's meeting, particularly to review and transmit to the working commissions blocks of work for the next two years, arising mainly out of the Congress meetings.

'Nearly all these meetings took place at the RIBA itself—and the business was carried through expeditiously and, I think, well; as far as the statutory procedure is concerned I think we can say that the IUA has now established a tradition of working method, sufficiently firm to meet the wide variety of problems it is liable to be faced with. The way the host country handles this business is, of course, a significant factor in the development of the IUA itself—and by general comment the RIBA on this occasion did its job extremely well.

'No Major Disasters'

'Coming to the Congress itself, I am glad to report the absence of any major casualties or disasters, and when one thinks of the kind of things that might have gone wrong, including the weather, I am personally, as Chairman of the Organising Committee, extremely grateful.

'I would like to put on record my appreciation of the work that all members of the Committee carried through. In the months preceding the Congress we had, I think, about six main sub-committees, with co-opted members, working out the details of all sides of the activities of the Congress. This involved a very large number of people from student to the elder statesman, not only in London but in other parts of the country, especially in relation to the post-Congress tours, and in all an enormous amount of time and energy was willingly put at the disposal of the RIBA.

Tribute to Mr. Goulden

'I have, on a previous occasion, said something to this council about the work of the Director of the Congress, Mr. Gontran Goulden, and I would only like to say this, that, if ever the occasion produced the man, this curious law of nature did not fail us on this occasion. For the last few months, by the generosity of the Building Centre, he and his wife lived, it would seem, entirely for the Congress, and the multitude of parts soon melted into a pattern that not only did the RIBA credit, but gave the membership of the IUA confidence for its future. We are enormously obliged to the Director and his staff who worked with the greatest of enthusiasm.

'You did well, Mr. President, at the RIBA dinner to the Assembly to remind us that the IUA, while exhibiting the liveliness and even waywardness of youth, is still a fragile creature, and it is still very much in the making, and for some time to come, I believe, this kind of Congress provides, by general consent, the type of forum we need to promote its acceptance throughout the world, but the pattern is not, of course, finally set. We have already passed from a Congress devoted entirely to plenary sessions as at The Hague and Moscow; the break up into working groups used here for the first time is another stage, but I would just say to those who would perhaps like to see a more rapid evolution to a Congress almost entirely devoted to a large number of working groups, first that we still need, from time to time, a great cohesive gesture simply to bring together on a friendly footing individuals and groups who would not otherwise really meet or even communicate, and second, that the organisation of the IUA has deliberately designed a structure of working commissions to carry through, in between Congresses, the solid work of the Union. The main preoccupations of the Executive and Assembly, as I see it, in the next few years, will be to set these working commissions on a firm foundation.

'I am here, however, not to evaluate the Congress but to report. The mechanics of the whole thing, including translations and communications, worked according to plan. There were inevitably disappointments — Princess Margaret's absence, but on the other hand Mr. Antony Armstrong-Jones showed a determined quality that we all approved. One of our main speakers, Professor Nervi, could not attend owing to illness, but, on the whole, very few alterations had to be made in the arrangements.

'Budgeting for numbers was extremely accurate. We were fortunate to have the experience of Miss Robin Cridland, whose graphs proved to be very close—almost day by day and certainly week by week; and on actual numbers, I would remind you, a very great deal depended. In the end, between 1,700 and 1,800 people came to this Congress. The plenary sessions and the working groups were, in size, almost exactly as forecast. The working groups kept and even increased their numbers from beginning to end.

'The arrangements for visiting buildings both in London and in the country, and for entertainment, involving very large numbers of people, worked in the main very well. On the first evening, our experiment in private entertaining was carried through; a difficult operation, and one least amenable to forward estimating. As it turned out I am aware that some willing hosts who had put themselves to some trouble were disappointed; there was a small amount of "poaching"—mainly due to delegates not reading their invitations—but even so, over 80 private parties were successfully held in and around London, representing a considerable proportion of total registrants, and these were much appreciated.

'The main location of the Congress on the South Bank, with its headquarters and exhibition buildings designed by Theo Crosby in a remarkably short time and built by the generous aid of some members of the building industry—this location, near the various meeting halls, proved convenient and attractive.

Prince Philip's Visit

'The Duke of Edinburgh spent a morning going round the working sessions: he spoke to a very large number of people and made, from what we have been told, a strong and agreeable impression. At the very end of the Congress, after the last session, there was an impromptu session for students at their exhibition, with a mixed jury of British professors, Ove Arup, Candela and Buckminster Fuller—a very lively and interesting conclusion. The students, I am glad to say, through BASA, came much more fully into this Congress than ever before and this itself sets a very striking and useful precedent.

'As to finance, the accounts are not yet completed, but Mr. Jefferiss Mathews reports that, on his present information, there would seem to be a likely deficit of something in the region of £2,700. If to this is added the dues to the IUA (the RIBA will be asked to approve these in due course), which are likely to amount to about £1,500, the total liability to the RIBA would seem to be in the region of £4,000. We may think £4,000 a largish sum—but I have heard it said that a 24-page supplement on Architecture in *The Times*—one of the unexpected col-

lateral blessings arising out of the Congress—it has never happened before—is well worth several times that sum to the architects in Britain!

The C & CA Contribution

'We must also remember that this Congress would not have been held at all without very considerable assistance from our friends outside the RIBA. Apart from hospitality at Lancaster House, County Hall, and Guildhall, we received no official subventions; on the other hand, the printing bill met by the Cement and Concrete Association (quite apart from their unique evening at Wexham Springs) will be in the region of £10,000; this will also include publication of the proceedings of the Congress, planned to be ready for distribution by the end of the year. This very large contribution, along with the provision of the buildings on the South Bank, has made the Congress viable, and on a total expenditure of what must be of the order of £80,000-£100,000, I do not think the RIBA contribution can be called excessive.

'I should, however, like to add this: the Congress has been a major task for the RIBA. Whatever we may formally have put into our accounts, there is still an item that does not appear; we have had many volunteers, and I have referred to them; but in addition—the RIBA staff, augmented as it was—has stood a great strain—from the Secretary downwards. The Secretary of the Congress Committee, David Taylor, is also Secretary of the IUA Section, and acted in addition as interpreter at the executive meetings. I personally have a great debt to our own staff, who have taken the brunt of the strain, apparently in their stride.

'I understand it is the intention of Mr. Gordon Ricketts to work up, for posterity, the organisation of this Congress. I hope he will do this; it will be of value, not only to the RIBA itself—in terms of management and organisation—but particularly to the IUA. While we do not, I am glad to say, have any responsibility for the next Congress, we can hand on our experience to our successors; I am sure it will be a most interesting social document!

'I have not mentioned the brilliant summing up at the close by Jim Richards, surely a masterpiece of its kind and leading to a series of directives to the working commissions, but I should not close without a reference to your own contribution both in a private capacity and as President of the RIBA.

'If the Commonwealth is to come into the IUA, as I believe it will, this will in no small measure be due to your diplomatic firmness behind the scenes; your speech at the RIBA dinner, your chairmanship at the plenary sessions, added to the stature of both the RIBA and the IUA, and what more can we say than that?'

Safety and the Local Authority

Typical Causes of Accidents on Building Sites

SPEAKING AT the eighty-fourth general meeting of the London Building and Engineering Construction Accident Prevention Group, held at the Industrial Health and Safety Centre, London, SW, on July 19, MR. A. S. AYRES, ARICS, building manager for Bermondsey Borough Council, pointed out that while older men might become accident prone by too much reliance on their own experience the natural tendency of youth was always to 'take a chance.'

Mr. Ayres explained that the Group had developed courses for the training of supervisors in safe working methods and had encouraged and sponsored teaching in day continuation classes and evening schools. Such courses, however, were available only to young craftsmen, the education of the unskilled operative having still to be seriously tackled.

The speaker did not believe that poster campaigns were effective enough. He suggested that complete safety consciousness on the part of management and operatives alike would only be achieved by a continuous and persistent educational policy over a long period.

Turning to the causes of accidents Mr. Ayres dealt first with new building work on which the main hazards were projecting nails causing foot injuries. These, he said, were often not very serious but accounted for 25 per cent of accidents of all kinds during 1960. Open floor joists caused three cases out of every sixty (5 per cent); displaced scaffold boards caused a similar number. On roof maintenance work there was a tendency to ignore crawling boards and to avoid the use of scaffolds when renewing chimney pots. Other causes listed by the speaker included the carrying of materials and ladders on bicycles; unlighted handcarts left in streets at night; ladders left erected without protection against their use by children; the renewal of guttering from ladders; and work carried out near roof edges without guards or safety belts.

Cradle Scaffolds

When cradle scaffolds were used, continued Mr. Ayres, it was essential that there were secure fixings, regular inspection, and that the operatives were trained in their use—including the proper spacing of cradles. Repairs to windows on high blocks called for the use of safety belts or ropes, and even in the case of internal work there was a danger in the case of curtain walling and picture windows. Guard rails were needed when working up to 6 ft. from such areas.

Finally Mr. Ayres made a plea for standard colours for containers for such liquids as paraffin and petrol to prevent accidents caused by erroneous identification. He also mentioned the danger from loose cables used for temporary lighting, expressing the need for low voltage transformers wherever possible. The tendency of operatives to improvise rather than call for proper connections posed a very difficult problem.

The Offices Act

Requirements for Hygiene and Sanitation

THERE IS so far no statutory legislation governing such factors as the amount of superficial or cubic space to be assessed as the reasonable minimum for each office worker; the minimum number of wash basins or toilets to be used by a given number of clerical workers, or the supply to those wash basins of both hot and cold water. There are, of course, many recommendations by various authoritative bodies, and local authority by-laws control conditions affecting individual and collective health and hygiene. Although recently built office accommodation is reasonably spacious and adequately equipped there are many pre-war large and small buildings which may soon have to be improved in some degree under the provisions of the new Offices Act, which becomes operative from January 1 next. So far as is known at present, this new Act will, like the Factories Act, include minimum conditions of hygiene and sanitation.

It seems likely, for example, that both hot and cold water will have to be made available in every office washroom, and wash basins and toilets provided in specified — or recommended — minimum quantity. If such specifications or recommendations follow those set out in the British Standard Code of Practice many of the older office buildings will need to install additional sanitary amenities. Instead of recommendations they may become legal obligations, with attendant penalties for failure to observe them.

Expert advice on modernising existing installations may be obtained from the Sanitary Fireclay Technical Bureau at 57 Gt. George-street, Leeds 1.

The following extract from British Standard Code of Practice CP3, 'Functional Requirements of Buildings,' gives the recommended number and type of sanitary appliances for offices:

SANITARY ACCOMMODATION IN OFFICE BUILDINGS

FITMENTS	FOR MALE PERSONNEL	FOR FEMALE PERSONNEL
WC's	1 for 1– 15 2 for 16– 35 3 for 36– 65 4 for 66–100 For over 100, add at the rate of 3 per cent.	1 for 1– 12 2 for 13– 25 3 for 26– 40 4 for 41– 57 5 for 58– 77 6 for 78–100 For over 100, add at the rate of 5 per cent.
Urinals	Nil for up to 6 1 for 7– 20 2 for 21– 45 3 for 46– 70 4 for 71–100 From 101 to 200, add at the rate of 3 per cent. For over 200, add at the rate of 2½ per cent.	
Lavatory basins	1 for 1– 15 2 for 16– 35 3 for 36– 65 4 for 66–100 For over 100, add at the rate of 3 per cent.	1 for 1– 12 2 for 13– 25 3 for 26– 40 4 for 41– 57 5 for 58– 77 6 for 78–100 For over 100, add at the rate of 5 per cent.
Cleaners' sinks...	At least 1 per floor, preferably in or adjacent to a sanitary apartment.	

Architectural Aspects of Hyperbolic Paraboloids

Design and Cost of a Visually Exciting and Structurally Significant Form

At a meeting of the Reinforced Concrete Association, held at 11 Upper Belgrave-street, SW1, earlier this year, three speakers discussed the various aspects of hyperbolic paraboloids. Mr. J. D. Bennett, BSc, submitted a paper on the structural possibilities and Miss Charlotte Hume, ARIBA, and Mr. H. S. Scorer, ARIBA, submitted papers on architectural aspects. Mr. Scorer, whose paper we reproduce 'in extenso', dealt with the problems of design, detailing and cost. He acknowledged the assistance of Dr. K. Hajnal-Konyi, both in the general consideration of shell structures, and in their detailed application to particular buildings. Mr. Scorer said:

THE IMPORTANCE OF CLOSE CO-OPERATION between the engineer and the architect is well known and in the design of shell structures this is absolutely essential, particularly at the early stages in the design. This co-operation in no way absolves the architect from the responsibility for determining the basic shape, but it helps him to anticipate the consequent problems. The architect must: (1) determine the basic form, based on the functional requirements of the building; and (2) co-ordinate the detail of the shell structure with the other elements in the building.

Buildings may be considered under: (1) single shells; (2) a limited group of differing shells; and (3) repetition of identical shells. Under the first two headings a freer form is possible both in plan and section. The repetition of identical shells suggests a plan pattern based, for example, on the rectangle, hexagon or equilateral triangle, although an exception worth mentioning is Trinity School at Southwark (designed for the LCC by Messrs. Chamberlin, Powell and Bon with Dr. A. R. Flint, BSc, AMICE, as consulting engineer), which consists of five identical shells on a pentagonal plan.

It is important that the building should be conceived right from the start as a shell structure and not as a normal rectangular flat roofed building where the roof is not quite flat. The essential quality of a shell is that it shall be twisted or deformed out of the plane surface. The particular amount of distortion is critical; if it is too flat the structure is weak and the appearance uninteresting; if it is excessively distorted the building is likely to contain an unnecessarily large volume, inadequate headroom, or both.

In their normal everyday experience architects deal for the most part with plane forms mutually at right angles, or simple plane deviations from this. One of the difficulties in shell structures is to appreciate the implications of a shape which is doubly curving and therefore is changing its section at every point. Models are undoubtedly the most helpful tool but they are liable to be slow and difficult to construct, particularly when a variety of different shapes must be considered. It is important, therefore, that architects should develop quick, economical and simple techniques of model making, different types of model being required at various stages of the design. Models help to show up problems which would otherwise not be apparent until a more advanced stage in design. The models prepared by architects differ essentially from those made by engineers as they are concerned with the effect of the form on the use of the building rather than structural considerations—both types of model being useful in detailing.

As the initial sketch plan for a building is almost bound to come from the architect it is important that he should put forward both architecturally and structurally sound proposals. This involves a structural intuition rather than the ability to make detailed calculations. With this general structural feeling should go a feeling for the deformation of the shell under various loadings as this may become critical in the detailing.

Detailing

Ties are, generally speaking, most unwelcome, both on the grounds of physical obstruction and appearance. Buttresses are likely to be more expensive and may occupy plan space which is inconvenient, and even on normal ground are likely to require a tie in the floor slab, in which case pits, ducts, drains manholes and underground services must not be forgotten. With an individual shell there seems to be architecturally a strong case for having the low point of the shell as near to the ground as is practicable, thus allowing short columns and a tie in the floor. With multiple shells these should be arranged so that buttresses are only required at the perimeter of the building. Arrangements incorporating the ties within the shell thinkness have advantages, although this restricts the possible shapes.

Edge beams are an important component in shell design. If put on the extreme edge they conceal visually the actual thickness of the shell. Where large cantilevers from the main supports are involved the edge beams tend to become large merely to support their own weight. Once the decision as to a design on a shell structure has been made, the edge beams should also be designed on this basis, that is to say, the beam should obtain strength from its shape rather than its size. Although this may involve complicated shuttering or manufacture it may well be more economical. Where edge supports are widely spaced the edge beam may constitute a relatively high proportion of the cost and on this score alone justifies careful thought.

In addition to the main structural support additional supports in the form of anchors or props are probably required to prevent overturning due to wind or eccentric loading. These may be unwelcome visually and cause inconvenience in planning. The greater the distance between supports the larger the edge beam. The absence of supports at the edge is likely to give rise to movement of the shell owing to eccentric loading, wind, thermal effects or creep. This may not be particularly important in an open canopy but where glazing is running up to the underside of the shell allowance must be made for this movement, the extent of which is difficult to calculate. Movement in a vertical plane will also result in movement in a horizontal plane and this adds further complications at the corners of the building. Pre-stressing has the advantage of limiting the deflection.

In a single shell a high degree of twist provides more strength but excessive heights on external walls require mullions of considerable and varying height and therefore expense. Even though external walls may be constructed mainly of glass this forms a strong visual barrier unless the interior is very well lit, with the loss of much architectural interest to the external appearance. Progress photographs of shells under construction, before the external walls are erected, are often more interesting and attractive than photographs of the completed building, for this reason.

If the external walls are set well back from the edge of the shell, the shell reads more clearly. The detail of the junction between the top of the window mullions and the shell must allow for deflection, temperature movement, and creep. Any walls which are not parallel to the generators of a hyperbolic paraboloid will have a curved junction with the shell, the curvature varying continuously.

In a hyperbolic paraboloid half or all the water is collected to one point very quickly. Care must be taken, therefore, to ensure that the rainwater pipes are sufficiently large in diameter, with easy bends. The section at the low point and at edge beams should be checked to ensure that the water arrives at the outlet and does not run off the edge of the roof. It may be appropriate in certain cases to discharge the water straight off the edge of the roof into a pool or water butt, but this is likely to be the exception rather than the rule.

Insulation and Waterproofing

The insulation of a concrete shell should, if possible, be on the top surface in order to maintain a more constant temperature in the shell. Thin shells are more subject to temperature variation than heavier structures, and being twisted part may face the sun when the other half is in shadow.

In a simple hyperbolic paraboloid the central area of the roof is dead flat and the natural fall varies continuously in direction from the high point to the low point. Shells expand and contract for a variety of reasons and some form of elastic waterproofing is therefore essential.

Waterproofing can be carried out in most cases with roofing felt, or similar bitumastic treatments, provided this gives

a visually satisfactory and sufficiently durable finish. Better quality waterproofing materials require careful detailing as the roof is a conspicuous element in the design and they are likely to be expensive. One very attractive solution by Messrs. Chamberlin, Powell and Bon has been to use white mosaic on top of the roofing felt. Generally speaking both waterproofing and rainwater disposal require considerable thought by the architect at an early stage in the design.

Internal finishes will be determined to a large extent by the use of the building. The natural inclination will be to leave the structure exposed on the underside. The acoustic properties of any particular shell design are difficult to predetermine and sound absorbents may be required. An asbestos spray follows the structural form easily enough but suspended ceilings, being for the most part based on rectangular units, require careful detailing to fit the form of the shell.

Shell design generally implies clean, flowing, unobstructed lines, and particular care therefore has to be taken that these shall not be marred by heating equipment and artificial lighting. With more conventional forms of structure, conduits and pipework can often be concealed within the structure or within suspended ceiling voids which are not available in a shell structure.

Construction in Concrete

An initial decision must be made as to whether the shells are to be cast 'in situ' or precast. Precasting is likely to limit severely the size and form of the shell. Multiple shells cast 'in situ' should be designed to allow for the re-use of shuttering with the minimum of dismantling. The design of the shuttering and the supporting scaffolding can have a great effect on the cost and the careful detailing of the shuttering boards is obviously important where the concrete is to be left exposed on the underside. Casting 'in situ' tends to be slower and subject to weather conditions. Where shells have a high degree of twist double shuttering may be involved, with added expense, and it may be that the quality of the concrete and the control of the amount of water is of less importance than the ease of placing the concrete.

An Example of Costs

From an architectural point of view the *overall* cost of the building is the deciding factor and not necessarily the cost of the shell. A more expensive structure can result in a cheaper building and 'vice versa.'

LINCOLNSHIRE MOTOR CO. GARAGE

Area 10,250 sq. ft. ... 106 ft. 9 in. by 96 ft.
Height ... ... 14 ft.-28 ft.

COST PER SQ. FT. OF PLAN AREA

	s.	d.
Piles	1	10
Pile caps		2
Columns		8½
Shell areas	8	5½
Edge beams	4	1
Roof lights		4
Ties	2	2
Corner steel columns ...		3
Waterproofing	1	2
Decoration		2

NOTE: The edge beams are relatively high in cost partly due to the beam on either side of the roof light.

COST FOR SINGLE CANOPY

Area 3,600 sq. ft. ... 60 ft. 0 in. by 60 ft.
Height ... ... 0 ft.-36 ft.

	s.	d.
Shell and edge beams only	13	10
Waterproofing	1	2

NOTE: This design incorporates buttress columns with ties in the floor slab.

The costs for the Lincolnshire Motor Co. garage may be taken as a guide, although it must be borne in mind that costs are liable to be somewhat erratic in general and particularly so for shells. For 'in situ' concrete shells it is better to have large shells than a series of small ones. It is likely to cut down the cost of edge beams without increasing the cost of the shell areas to the same extent.

'Design for the Disabled'

Symposium in Conjunction with the Building Exhibition

FROM A CORRESPONDENT

DESIGN of housing for the disabled is an important endeavour in its own right and this is generally accepted. What is not so widely realised is that the advances made in this aspect of housing design could be brought into general use to improve overall housing standards. Design for the disabled should not be treated as a separate and specialist part of building but as a forerunner in the search for methods to improve the comfort, convenience and safety of all housing.

A few brief examples prove the point. These are safety handles for baths, electric master switches which can be under individual control or illuminate the whole house, long-handled bolts on doors, kitchen worktops at one level so that heavy pans can be pushed along by weak wrists, adjustable rails in clothes cupboards, handrails for steps where steps cannot be replaced by a non-slip ramp, safe heating for bathrooms and lavatories, revolving shelves for saucepans for kitchen corner cupboards, two-way hatches for deliveries.

This is a brief and seemingly superficial list of ways in which a house can help a disabled person to live a normal life. If these and others were adopted as general principles, all houses would be safer places and more convenient places to live in—and safety is an important consideration when more people are injured by accidents in the home than by accidents on roads.

This is a problem of universal and increasing importance and its relevance to architects, builders and town planners is often minimised because its value in terms of their day-to-day work has not been made apparent. Houses, flats, whole communities at present on the drawing board or under construction could incorporate comparatively minor modifications to conventional design which would prevent the need for purpose-made buildings whose status is categorically defined 'for the disabled.'

Making Life Easier

The effect of this would be to make life much easier for a much wider section of the community than is at first supposed. The very old and the very young, persons convalescing from everyday illness, pregnant women, are all made painfully aware at times that a house can be a difficult place to live in and that disablement—even as a temporary state—is a difficulty in which architects can help them.

Apart from this widespread sector of need, unfortunately, permanent disablement shows no signs of decreasing. In the more advanced countries, longer expectation of life and proneness to accident in industry or on the roads in a manufacturing society add to the number of those with impaired capacities. In less advanced countries, the disease rate or lack of preventive treatment cause disablement whose discomfort can be alleviated by architectural ingenuity.

These are some of the reasons why The Building Exhibition in association with the Polio Research Fund is sponsoring this year at Olympia a symposium on 'Design needs of the disabled.' In this, architects, doctors, builders and contractors will be invited to examine this important subject and see if its rate of progress cannot be speeded up. A great deal of research has been done and it is hoped that the symposium will make information more widely available as well as co-ordinating existing knowledge on the subject.

In conjunction with the symposium, The Building Exhibition organisers are designing an exhibition stand in which tangible examples of ways of helping the disabled will be shown. Some of these have been listed above—special stoves, the correct width of shelves, a magic eye for doors, handles designed for weak wrists. Most people know at least one case of polio or childhood injury. Here will be shown what can be done to ameliorate the effects.

New FBI Technical Director

DR. D. H. SHARP has been appointed director (technical) of the FBI as from November 1. He will take up the appointment on the retirement of the present technical director, Major-General A. J. H. Dove, who is leaving the Federation at his own request at the end of October in order to devote more time to voluntary work. At present Dr. Sharp is assistant to one of the managing directors of Fisons Ltd. At the FBI he will be responsible for the administration of a wide range of policy and services, including location of industry; town and country planning; transport; water supply; trade effluent disposal; industrial research; education; industrial art; technical aid to developing countries; the FBI overseas scholarship scheme; and technical legislation.

THE BUILDER LONDON MEASURED RATES

These prices for new building work in London normally appear in the first issue of each month only. The prices are inclusive of all allowances for National Insurance, Holidays with Pay and Public Holidays, Third Party Risk, Travelling Allowances and Guaranteed Week. They cover a profit of 10 per cent on the prime cost without any addition for establishment charges.

These rates do not include for Foremen and other preliminary items, such as office, sheds, plant and scaffolding, etc., and these must be added accordingly.

The basic cost of the labour and materials used in arriving at the rates has been derived from the 'Current Prices of Materials' published in *The Builder*.

The data given are copyright. While every endeavour is made to ensure accuracy, we do not hold ourselves responsible for any error that may occur.—EDITOR.

EXCAVATOR

All hand labour	*Per yd. cube*									
	Loose earth		*Firm soil*		*Stiff clay*		*Chalk and flints*		*Rock, etc., no blasting*	
Surface excavation to shallow depths	s. 9	d. 4	s. 11	d. 10	s. 13	d. 8	s. 20	d. 7	s. 52	d. 8
Bulk do. or large trenches, etc., not exceeding 5 ft. deep	8	6	10	9	12	5	18	3	47	11
Trenches do. under 4 ft. 6 in. wide and do.	11	6	13	11	16	1	23	9	62	10
Pier holes and similar under 6 ft. square and do.	12	11	16	1	18	8	26	6	70	11
Additional throw for every 5 ft.:										
Bulk excavation	4	1	4	1	6	0	6	0	6	2
Trench „	5	7	5	7	7	6	7	6	7	8
Pier „	6	3	6	3	8	6	8	6	9	7
Return, fill and ram	5	9	5	9	7	8	7	8	10	0
Wheeling surplus n.e. 100 yds. run and depositing	9	2	9	2	9	2	9	2	10	6
Underpinning in trenches	15	0	20	9	24	2	34	6	—	

	s.	d.
Loading lorries and transporting to tip ... ... Yd. cube	18	0
Basketing out and depositing ... ... „	11	6
Planking and strutting to sides of surface or basement trenches:		
Depth up to 5 ft. ... ... Ft. sup.		7
„ „ 10 ft. ... ... „		9
„ „ 15 ft. ... ... „		10
Hardcore:		
Filled-in layers and consolidated ... ... Yd. cube	24	6
do. 4 in. thick ... ... Yd. sup.	3	7
do. 6 in. thick ... ... „	4	9

CONCRETER

	Basic yard cube rates			
	1:12	1:3:6	1:2:4	1:1½:3
Aggregate	1½ in. all-in	1½ in.	¾ in.	½ in.
Concrete in normal foundations: (minimum 8-ton cement loads)—	s. d.	s. d.	s. d.	s. d.
Portland cement standard specification	69 0	77 8	85 6	93 7
Portland cement rapid hardening	70 3	79 6	88 0	96 11
Water-repellent cement	73 0	83 5	93 9	104 1

Add to above basis for:	s.	d.
4 in. surface beds ... ... Yd sup.		8½
6 in. „ „ ... ... „		9½
(If above two items worked around mesh reinforcement, add 6½d. per yd. *super.*)		
Foundations in underpinning in short lengths ... Yd. cube	19	9
Beds and flaunchings to drains ... ... „	9	4
Pier or stanchion foundations—small ... ... „	4	9
Sundry small items not exceeding 3 ft. cube in plinths, curbs, padstones, etc. ... ... „	27	0

REINFORCED CONCRETE

ADD to above 'Basic Yard Cube Rates'

Reinforced concrete including working around reinforcement between formwork and hoisting to normal levels :	s.	d.
Foundations and similar ... ... Yd. cube	6	3
Isolated stanchion or pier bases ... ... „	6	3
Walls not exceeding 6 in. thick ... ... „	31	3
„ „ „ 12 in. „ ... ... „	21	10
Suspended floors or flat roofs 4½ in. thick ... ... Yd. cube	27	0
„ „ „ „ 6 in. „ ... ... „	20	3
„ „ „ „ 9 in. „ ... ... „	17	3
(Beams attached to floors or flats, *add* 7/9 yd. cube)		
Isolated beams or lintels average 72 sectional inches ... „	37	6
Do. average 144 sectional inches ... ... „	30	2
„ „ „ „ 144 „ „ „	39	4
Staircases and landings, etc. ... ... „	65	6
Shell roofs average 3 in. thick, including labour forming curved surface ... ... „	156	0
Hollow tile floors :		
Hollow clay tiles 4 in. thick with 1 : 2 : 4 concrete ribs at 14 in. centres with filler tiles and 1½ in. fine concrete screed (excluding reinforcement and form work) ... ... Yd. sup.	20	0
All as above but 6 in. thick clay tiles ... ... „	24	3
„ „ „ „ 9 in. „ „ „ ... ... „	30	3
Sundry items :		
2 in. concrete (1 : 2 : 4) blinding bed ... ... Yd. sup.	5	3
Spade finish to concrete beds ... ... „		10½
Trowel „ „ „ ... ... „	2	1
Laying to falls and currents ... ... „	1	3
Hacking concrete by hand ... ... „	3	2
Hacking concrete by use of proprietary liquids ... „	1	9
Damp-proof membrane in three coats with sanded key ... ... „	5	3
⅜ in. Bitumen expansion joints 4 in. deep in floors ... Yd. run	4	3

	Mild steel rods (round) cut, bent, hooked, wired and fixed complete (Ex. London Stock)							
	¼ in.		⅜ in.		½ in.		⅝ to 1 in.	
Reinforcement :	s.	d.	s.	d.	s.	d.	s.	d.
Floors beams laid in only	94	0	82	2	76	11	71	6
„ „ wired into frames...	107	6	95	8	90	6	85	0
Walls wired into frames	107	6	95	8	90	6	85	0
Columns wired into frames ...	107	6	95	8	90	6	85	0
Staircases wired into frames ...	110	3	98	5	93	3	87	8

	s.	d.
Steel mesh fabric reinforcement :		
Laid in floors including laps and straight cutting and wiring, etc. :		
Weight 1.83 lb. per yd. sup. ... ... Yd. sup.	3	4
„ 4.71 lb. „ „ „ ... ... „	4	10
„ 7.32 lb. „ „ „ ... ... „	7	6
Raking cutting worth 6 in. material cost per ft. run		
Circular cutting worth 9 in. material cost per ft. run.		
Formwork (Sawn) including strutting, easing and removal and average four times use of timber :		
Soffit of floors and flat roofs ... ... Yd. sup.	18	6
Sloping soffits of stairs ... ... „	25	0
Barrel-vault soffits of floors and roofs ... ... „	23	6
Vertical sides of walls ... ... „	17	6
Battering sides of walls ... ... „	23	0
Columns ... ... Ft. sup.	2	8
Lintels and beams ... ... „	2	10
Staircase strings cut to tread and riser ... ... Ft. run	4	0
Edges of concrete floors, etc., up to 12 in. deep per inch in height ... ... „		2½
Rebates or similar per inch girth up to 6 in. girth „		3
Raking cutting ... ... „		9½
Extra cost for wrought shuttering and labour rubbing down to leave fair face on concrete ... Yd. sup.	2	10
Pre-cast Concrete (1 : 2 : 4) *including fair face :*		
4½ in. x 6 in. reinforced lintels ... ... Ft. run	3	4
9 in. x 6 in. „ „ ... ... „	5	9
9 in. x 9 in. „ „ ... ... „	9	4
Steel Formwork :		
Steel shuttering forms with patent expanding floor centres and telescopic props not less than four times use on each job with continuous use ... Yd. sup.	14	0

Partitions : (Minimum 100 yd. super)	*Yd. super rates*			
	2 in.	*3 in.*	*4 in.*	*6 in.*
	s. d.	s. d.	s. d.	s. d.
Clinker concrete slab partitions in cement mortar	10 4	12 9	15 0	—
Cranham terra cotta slab partitions in cement mortar	14 8	17 8	20 8	—
Moler partition block partitions in cement mortar	20 5	23 8	26 8	—
Thermalite-Ytong partition blocks in cement mortar	—	15 8	19 4	28 6
'Phorpres' hollow clay partition blocks in min. of 6-ton loads ...	10 9 (2½ in.)	12 9	16 1	26 2

Cuttings :

Raking cutting and waste = ⅓ of ft. sup. rate
Circular „ „ „ = ½ of ft. sup. rate
Cutting around openings = ¼ of ft. sup. rate
Cutting and bonding at angles, intersections and ends all at 6d. ft. run.

BRICKLAYER	*Yd. super rates*			
	Plain flettons	*Rough stocks*	*Second stocks*	*Blue wire-cuts*
	s. d.	s. d.	s. d.	s. d.
Brickwork in cement mortar (1 : 3) reduced to one brick thick	39 6	55 0	63 9	95 0
Deduct if in 1 : 1 : 6 cement-lime mortar	10	10	10	10
Add if in :				
Filling in openings	6 3	6 3	6 6	8 1
Backing to masonry	3 1	3 1	3 4	4 0
Building overhand	2 0	2 0	2 1	2 5
Raising on existing work	3 1	3 1	3 4	4 0
Circular on plan to quick sweep...	6 0	6 0	6 4	7 0
Small detached piers, plinths, etc.	9 2	9 2	9 8	11 6
Underpinning	6 0	6 0	6 6	7 9
Brick-on-edge walls	14 2	19 4	22 7	—
Half-brick sleeper walls honeycombed	14 11	20 0	—	—
Half-brick walls	23 10	31 9	36 4	55 4
do. with fair face and pointing both sides as work proceeds	27 4	—	40 0	59 8
One-brick wall with fair face and pointing both sides as work proceeds	45 4	—	69 6	102 4
11 in. cavity brick wall with two half-brick skins with 2 in. cavity and three galvanised iron twisted ties to every yd. sup.	51 6	—	76 0	—

Sundry items :		s. d.
Horizontal double slate damp-proof course ...	Ft. sup.	3 8
Vertical „ „ „ „ ...	„	4 6
Hessian-base bitumen damp-proof course	„	1 7
Levelling and preparing for raising on	„	1 2
Cutting, toothing and bonding new to old	„	4 6
Wedging and pinning with slates in underpinning ...	„	5 8
Rough cutting	„	7
Cutting and fitting brickwork around steel ...	„	7
Bed and point frame one side	Ft. run	4½
Rough cutting squint or birdsmouth	„	7
Labour plumbing angles on faced work	„	3
Rake out and point to lead flashing	„	8
„ „ „ „ stepped flashing	„	11½
Cutting groove for skirting and point	„	1 9
Shallow chases for small pipes and conduit	„	1 11
Metal reinforcement 24 gauge 2½ in. wide	„	5
Faced work : (Flemish bond) :		
Add or deduct for every 10s. per 1,000 difference from basic price of common bricks in Flemish bond in solid work	Yd. sup.	9
do. to half-brick wall in stretcher bond	„	6½
Add for extra labour to each side in facings and pointing as work proceeds	„	3 6
do. butt joints raked out and pointed with special mortar	„	6 9

If built in English bond, add 12½ per cent to above items.

Labours :		
Fair cutting	Ft. run	1 3
Fair circular cutting	„	1 6
Fair squint or birdsmouth cutting	„	1 11

Copings :		*9 in. wall*	*14 in. wall*
		s. d.	s. d.
Brick-on-edge coping in flettons finished fair and pointing as work proceeds ...	Ft. run	2 8	3 7
Add for every increase by 10s. per 1,000 in cost of superior bricks	„	1	1½
Add for two courses of roofing tiles under and cement weather fillets on both sides	„	4 0	4 9
Cills :			
Two courses of roofing tiles laid breaking joint in cement mortar, set weathering and pointing ...	Ft. run	4 0	
Arches :			
Extra over fletton brickwork for brick-on-end flat arch 4½ in. on soffit and 9 in. high in facings p.c. 350s. per 1,000 and pointing	Ft. run	3 9	
Extra over fletton brickwork for fair axed arch in stock facings p.c. 350s. per 1,000 and pointing (cuttings measured separately)	Ft. sup.	9 9	

CURTAIN WALLING

Curtain walling of hollow, extruded, aluminium alloy mullion and transom units fixed together to form a grid to conventional steel and concrete framework, including glazing complete and a reasonably priced infilling panel and subject to the number of vents, etc., required, a fair average price is from 23/- to 30/- per ft. sup.

PAVIOR

	Yd. super rates			
	½ in.	*¾ in.*	*1 in.*	*1¼ in.*
	s. d.	s. d.	s. d.	s. d.
Cement screed (1 : 3) to receive pavings	4 10	5 9	6 8	7 8

Add to above for :		d.
Trowelling smooth	Yd. sup.	8
Narrow widths or small quantities — add 25 per cent. to plain surfaces : Laying to falls	„	5

	Yd. super rates			
	1 in.	*1¼ in.*	*1½ in.*	*2 in.*
	s. d.	s. d.	s. d.	s. d.
Granolithic paving (1 : 2½) laid on concrete	9 6	11 0	13 3	14 6

Add to above :		s. d.
Narrow widths or small quantities—add 25 per cent. to plain surfaces.		
Surface hardening with three coats of silicate of soda	Yd. sup.	1 8
Carborundum finish with 2 lb. per yd. sup. trowelled in	„	3 3
¾ in. skirting 5 in. high covered at bottom and fair top edge	Ft. run	3 0
Mitres and ends—8d. each.		
Composition flooring ½ in. thick	Yd. sup.	18 0
Terrazzo paving ⅜ in. thick	„	45 0
Rubber flooring ¼ in. thick	„	65 0

ASPHALTER

		Mastic BSS 988	*Natural rock BSS 1162*
Asphalt roofing :		s. d.	s. d.
¾ in. flat to falls in two thicknesses on felt underlay on prepared screed	Yd. sup.	15 0	21 0
do. in small quantities or narrow widths	Ft. sup.	2 1	2 11
6 in. high skirting with angle fillet and splayed edge at top	Ft. run	2 8	3 2
External angles on do.	No.	8	8
Internal angles on do.	„	8	8

		Mastic BSS 1097	*Natural rock BSS 1418*
Asphalt Damp-Proof Course and Tanking :		s. d.	s. d.
Vertical damp-proof course in 2 thicknesses	Yd. sup.	22 0	28 6
do. in narrow widths	Ft. sup.	2 8	3 6
¾ in. Horizontal damp-proof course in two thicknesses	Yd. sup.	15 0	21 0
do. in narrow widths	Ft. sup.	1 11	2 8
Vertical tanking in three thicknesses ...	Yd. sup.	26 3	33 0
1⅛ in. Horizontal do. in three thicknesses	„	20 3	30 8
Labour double angle fillet	Ft. run	1 5	1 5

DRAINLAYER

	Per yd. run Depth of trench				
	2 ft.	3 ft.	4 ft.	5 ft.	10 ft.
Excavate trench, part return fill and ram and remove surplus, inc. planking and strutting. (In firm soil—if in clay or chalk adjust in accordance with previous excavation rates)	s. d. 9 0	s. d. 23 9	s. d. 31 8	s. d. 39 6	s. d. 117 0

	Per yd. run		
	4 in.	6 in.	9 in.
Concrete (1 : 6–1½ in. agg.) 12 in. wider than external diameter of pipe in 4 in. bed and benching up on both sides	s. d. 8 9	s. d. 11 8	s. d. 12 5
do. but 6 in. bed and do. ...	10 6	12 5	14 11
do. but 4 in. bed and surround to pipe	12 9	15 10	21 0
do. but 6 in. bed and surround to pipe	17 1	20 10	26 1
	Per ft. run		
Salt glazed drain pipes laid and jointed in trench (Minimum two-ton loads) :	4 in.	6 in.	9 in.
	s. d.	s. d.	s. d.
'Seconds'	2 11	4 1½	6 7
'Best'	3 2	4 7	7 5
'Best Tested'	3 11½	5 8	9 5
'British Standard'	3 5	4 10½	8 0
'British Standard Tested'	4 2	5 11½	9 10
Extra for bends 'Best' quality	4 5	6 7	19 0
Extra for junctions 'Best' quality	7 10	11 1	23 11
Cast iron drain pipes to BSS 437 laid and jointed with molten lead in trench	15 6	22 9	—
Extra for :			
Short lengths	4 3	5 4	—
Bends and extra joints	23 6	60 6	—
Junctions and do.	48 3	105 8	—
Cast-iron gulley trap with 9½ in. x 6½ in. grating and joint	46 6	—	—
Cast-iron rainwater shoe with vertical inlet, inspection door and bedding and joints ...	71 9	—	—
Cast-iron inspection fittings with single branch fitting one side	167 0	—	—

	Per ft. run		
	3 in.	4 in.	6 in.
Pitch fibre pipes to BS 2760 and laying and jointing in trench (in loads of £60 to £250)	s. d. 2 7½	s. d. 3 5	s. d. 6 4

		4 in.	6 in.
Manhole items :		s. d.	s. d.
Brown glazed stoneware, straight, half-round channels	Each	5 7	8 0
do. ordinary channel bends ...	„	12 5	17 9
Three-quarter section curved channel bends with splayed ends	„	15 1	22 8
Cast-iron heavy galvanised steps	Each		13 6
Bedding and sealing medium weight manhole covers and frames (cost of cover to add)...	„		11 0
do. heavy road covers and frames	„		14 6

MASON

		Per ft. cube		
		Bath	Portland	York
Stone and all labours fixed in :		s. d.	s. d.	s. d.
Ashlar average 6¾ in. on bed ...	Ft. sup.	34 4	39 3	41 0
Moulded string course 9 in. x 6 in.	Ft. run	29 9	32 6	35 6
Moulded cornice 18 in. x 9 in. ...	„	75 0	81 3	84 6
Weathered and throated cills :				
9 in. x 3 in.	„	18 9	20 0	21 7
12 in. x 6 in.	„	37 6	39 1	42 0
Weathered and throated copings:				
12 in. x 3 in.	„	20 0	22 0	23 0
14 in. x 6 in.	„	40 0	45 0	46 6
Plinth rubbed top and face size :				
4½ in. x 9 in.	„	20 6	22 9	22 0
Plain steps, size 12 in. x 6 in. ...	„	—	—	37 6
„ „ „ 14 in. x 2 in. ...	„	—	—	17 6
Riser, size 2 in. x 4 in. ...	„	—	—	8 6
2 in. Sawn paving edges squared in random sizes	Yd. sup.	—	—	103 0
Supplied only :				
Templates and cover stones coped edges	Ft. cube	—	—	35 3

ROOFER

		Yd. sup.
		s. d.
Bituminous built-up roofing in two layers of felt, the first layer 45 lb. and the second 55 lb. to BS 747, covered with limestone or granite chippings n.e. ¼ in. thick		10 6
All as above but in three layers, the first and second layers in felt 45 lb.		14 6

	Steel Tees at	
	2 ft. 0½ in. centres	4 ft. 0½ in. centres
2 in. compressed straw building slabs in standard sizes fixed complete with 18G steel tees with fixing clips to steel structure to form roof decking :	s. d.	s. d.
Areas of 50–100 yds. sup.	29 0	22 4
„ 101–250 „	28 0	21 9
„ 251–750 „	27 3	21 3
„ Over 750 „	26 5	20 3
If 16G steel tees are used—Add to above ...	1 5½	9

Welsh slating	Per square		
	16in.x8in.	18in.x10in.	20in.x10in.
Laid with 3 in. lap and 2 zinc nails each slate	s. d. 391 0	s. d. 420 0	s. d. 519 0
Additional labours:			
Top edge cutting ... ... Ft. run	10	9½	9
Square abutment do. ... „	10	9½	9
Double course at eaves... „	1 6	1 4	1 3
Raking, cutting and waste „	1 0	11½	11
1½ in. x ¾ in. slate battening for last ... ... Per sq.	39 9	36 0	32 3

Roof Tiling	Per square		
	Berkshire hand-made	Stafford machine made	Concrete Tiles
Roof tiling with 10½ in. x 6½ in. tiles laid to a 4 in. gauge, every fourth course fixed with two galvanised nails	s. d. 270 0	s. d. 260 0	s. d. 167 6
1 in. x ¾ in. tile battening for last	43 0	43 0	43 0
Additional labours:			
Top edge cutting ... ... Ft. run	11	10	9
Square abutments do. ... „	11	10	9
Raking cutting to hips ... „	1 1	1 0	11
Eaves course ... ... „	1 1	1 0	11
Half-round ridge and hip tiles ... „	3 3	3 1	2 11

CARPENTER AND JOINER

	Ft. cube			
	Plates	Joists	Rafters & Partitions	Roof trusses
Softwood carcassing, including all waste, nails, hoisting and fixing	s. d. 18 4	s. d. 21 8	s. d. 25 0	s. d. 29 3

	Per square		
	¾ in.	1 in.	1¼ in.
Boarding and Flooring: (Softwood):	s. d.	s. d.	s. d.
Rough boarding to flats and roof... ...	139 0	178 0	217 0
Softwood plain edge flooring cleaned off	171 0	193 0	224 0
Tongued and grooved flooring cleaned off	187 0	217 0	263 0

		s. d.
Extra for 2 in. x 3 in. average firrings	Per sq.	89 0
Herringbone strutting to 2 in. x 8 in. joists	Ft. run	2 0
1 in. gutter boarding and bearers	Ft. sup.	4 2
Raking, cutting and waste on 1 in. flooring	Ft. run	10
Composition Boards, etc.:		
¼ in. hardboard to BS 1142 fixed to vertical battens	Yd. sup.	7 1
½ in. insulation board to BS 1142 do. do.	„	7 3
1 in. woodwool slabs fixed to flat or sloping soffits	„	10 0
2 in. compressed straw building slabs in standard sizes fixed to wood bearers to flat or sloping surfaces in quantities of 101 to 250 yds. super	„	15 5
¼ in. flat asbestos sheeting fixed vertically	„	11 6

Wood Block Flooring:		s.	d.
1 in. nominal West African mahogany flooring laid herringbone pattern in mastic...	Yd. sup.	36	0
1 in. do. Agba	„	36	0
1 in. do. Sapele	„	38	0
1 in. do. Beech	„	41	0
1 in. do. Rhodesian Teak	„	54	6

Extra for preparing and polishing 2/3 yd. sup.

	Sectional area		
	n.e. 4 in.	*4–6 in.*	*ex. 6 in.*
Skirtings:	s. d.	s. d.	s. d.
Softwood skirting with rounded or moulded edge, planted on including all labours in short lengths, mitres, etc., per in. in sectional area	4	3½	3

Labours over 6 in.—Mitres = 1 ft. run. Return mould ends = 1 ft. 6 in. run
Sawn grounds nailed 3¼d. ft. run. If plugged + 7d. ft. run.

	Ft. super	
	Large sqrs.	*Small sqrs.*
Sashes and Frames: (Softwood):	s. d.	s. d.
1½ in. rebated, rounded or moulded fixed	4 0	6 3
2 in. „ „ „ „	4 5	6 6
Add for hanging on butts ... ... each	3 0	3 0
Double-hung sashes and frames with oak cills, purpose-made and not less than 1 doz. in each order: Quantities under 1 doz.—add up to ¼ according to quantity. (Average size 4 ft. x 5 ft.)	11 9	15 9

Extra cost of boxed mullions 1s. 1d. ft. sup.
Extra for hanging sashes with lines, weights and axle pulleys 50s. each.

	Ft. super			
	1¼ in.	*1½ in.*	*1¾ in.*	*2 in.*
Doors: (All-purpose-made) (Softwood)	s. d.	s. d.	s. d.	s. d.
Softwood skeleton framed with hardboard flush both sides (standard internal pattern)	4 0	4 5	4 10	5 4
Framed, ledged and braced	—	5 7	6 9	7 0
Four panel square framed both sides	5 4	6 1	7 3	7 6
Add for each side moulded on last ...	6½	6½	6½	6½
do. flush framed	1 1	1 2	1 4	1 4
do. bead and butt do. ...	1 4	1 5	1 7	1 7
do. bolection moulded do. ...	1 7	1 7	1 7	1 7
do. raised and fielded do. ...	—	2 6	2 6	2 6

Rebated and beaded meeting stile 4d. ft. run.
Dwarf doors add up to 50 per cent. according to size.

	Sectional area		
	n.e. 6 in.	*6-12 in.*	*ex. 12 in.*
Window and Door Linings and Frames:	s. d.	s. d.	s. d.
Softwood linings per inch of sectional area	5	4½	4
Add for cross-tongueing	—	1¼	1
Frames, including rebating and once moulded or equivalent of two run labours, per sectional inch	4½	3¾	3¼

Transomes and cills plus 10 per cent. on frames.
Additional run labours plus 1½d. per ft. run.

	Per ft. run			
	Sectional area			
	1 in.	*2 in.*	*4 in.*	*6 in.*
Softwood Bearers, Fillets and Mouldings, etc.:	s. d.	s. d.	s. d.	s. d.
Wrot grounds, bearers, fillets, etc.	5	7¾	1 0	1 4½
Mouldings, picture rails, architraves, etc.	5½	8¼	1 0	1 5
Framed legs and bearers or similar	10	1 0	1 5	2 0
Glazing heads, mitred and bradded	6½	9½	—	—
Add for plugging	6½	6½	6½	6½
Add for brass cups and screws ...	2½	2½	2½	2½

	Thickness			
	¾ in.	*1 in.*	*1¼ in.*	*1½ in.*
Shelving (Softwood):	s. d.	s. d.	s. d.	s. d.
Slat shelving 2 in. wide spaced 1 in. between ... ... Ft. sup.	2 2	2 6	3 0	3 5
9 in. shelving... ... ... Ft. run	2 3	2 7	3 2	3 10
Shelving over 9 in. wide ... Ft. sup.	2 10	3 2	3 10	4 7

1 in. x 2 in. chamfered bearers in short lengths, plugged, each 2s. 6d.

	Ft. super	
	1 in. treads	*1¼ in. treads*
Staircases (Softwood):	s. d.	s. d.
Treads and risers with moulded nosings, glued, blocked and bracketed on carriages	6 10	7 9
Cross-tongued winders	9 0	10 3

		s.	d.
Strings, framed	Ft. run	5	3
Housings for treads and risers	Each	3	4
1 in. x 1 in. sq. balusters framed each end on rails ...	„	4	6
3½ x 3½ in. sq. framed newel	„	5	8
Mahogany handrail, average 3 in. x 3 in.	Ft. run	10	3
„ „ ramped	„	28	6

FIXING ONLY IRONMONGERY

All to Softwood:	*Each* s. d.		*Each* s. d.
Barrel bolts	2 0	Rim locks	5 9
Flush bolts	7 0	Mortice locks	12 1
Sash fasteners	3 9	Overhead door springs...	16 0
Casement fasteners ...	2 6	Patent floor springs and oil	40 0
Cupboard locks	5 6		

FOUNDER AND SMITH

Fabricated steelwork of basis section including hoisting and fixing at various levels:		s.	d.
Rolled steel joists	per cwt.	93	0
Compound girders	„	99	6
Stanchions	„	105	9
Compound stanchions	„	111	0
In roofwork—trusses and purlins	„	127	6
(Average prices, not for awkward work) Cleats, brackets, packing pieces, etc., in connections, including rivets and bolts	„	151	0
Wrot iron framed cat ladders	„	155	0
	to	175	0

PLUMBER

		Per ft. run		
		3 in.	*4 in.*	*5 in.*
Cast iron rainwater goods: (Under 5 cwt. lots):		s. d.	s. d.	s. d.
Half-round gutter jointed in red lead and bolted and fixed with iron brackets		3 5	4 1	4 11
Extra for stop ends	each	2 7	3 2	4 3
do. angles or outlets	„	6 3	6 7	7 9
O.G. gutter of ⅛ in. metal fixed as above		3 11	4 6	5 3
Extra for stop ends	each	2 11	3 6	4 8
do. angles or outlets	„	7 1	7 3	8 9
		2 in.	*3 in.*	*4 in.*
Rainwater pipe jointed in red lead and tow fixed to brickwork with pipe nails and distance pieces: ⅛ in. metal		4 7	5 2	6 9
Extra for shoes	each	5 6	7 6	10 0
do. bends	„	6 2	8 9	11 6
do. junctions	„	8 5	11 10	15 6
Cast iron soil and waste pipes: (Under 5 cwt. lots):		*2 in.*	*3 in.*	*4 in.*
Soil, waste or ventilating pipes with caulked joints fixed to brickwork with pipe nails and distances pieces: 13/64 in. metal		6 7	7 8	10 1
Extra for bends	each	14 7	17 3	21 1
do. junctions...	„	18 2	25 0	31 6
do. oval access door to any fitting	„	16 6	16 6	21 3
Extra cost for type 'E' holderbat fixing and cutting and pinning to brickwork	ft. run	1 8	1 9	1 9½

	Soakers	Flats	Gutters, valleys, etc.	Flash-ings	Stepped Flash-ings
External leadwork : (Over 1 ton) : Milled lead and labour in per cwt.	s. d. 140 7	s. d. 168 0	s. d. 181 3	s. d. 187 10	s. d. 199 9

Labours, etc. : Double welt...	ft. run		1 1
Copper nailing : Open	,,		5
Close	,,		1 2
Soldered seam	,,		7 0

	2 *in.* x 10 *lb.*	3 *in.* x 15 *lb.*	4 *in.* x 19 *lb.*
Lead pipes : (Over 1 ton) : Soil, waste and ventilating pipes, fixed to walls with plain lead tacks and brass screws ... ... per ft.	s. d. 11 1	s. d. 14 6	s. d. 18 7
Extra for : Lengths under 4 ft. ... ,,	3 4	3 10	5 0
Bends ... ... No.	13 9	26 0	27 0
Wiped soldered joints ... ... ,,	23 8	31 7	35 7
,, branch joints ... ... ,,	27 4	41 0	45 3

	Per ft. run					
	½ *in.*	¾ *in.*	1 *in.*	1¼ *in.*	1½ *in.*	2 *in.*
Lead pipes including running joints :	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Main in trench ...	3 6	5 2	7 9	9 7	12 2	17 9
do. fixed with hooks	4 5	6 2	9 0	11 3	14 0	19 0
Service and do. ...	3 7	5 1	7 2	8 7	10 10	14 1
Waste and do. ...	2 11	4 2	6 1	7 2	8 10	11 4
Extra for lengths under 4 ft. ...	11	1 2	1 9	1 11	2 4	2 10
Soldered stop ends ... ... No.	2 9	3 4	4 1	5 0	5 8	7 4
do. joints to fittings ... ,,	7 0	10 0	12 0	14 3	17 10	21 8
do. branch joints... ... ,,	7 8	11 0	13 2	15 8	19 7	23 10
Brasswork :						
Union with red lead joint to iron and soldered joint to lead ... ... ,,	12 10	16 3	20 3	24 2	30 4	43 6
Stop-cock and soldered joints ... ,,	22 2	32 2	45 7	71 10	92 11	170 9
Bib-cock do. ,,	18 6	25 7	—	—	—	—
Ball-valve do.... ,,	18 0	31 10	45 3	73 5	92 1	—
Steel tubing :						
Galvanised tubing Class C laid in trench	2 7	2 9	3 2	4 6	6 0	7 1
do. Class B fixed to walls, etc. ...	2 10	3 4	3 8	4 10	6 8	7 8
Extra for bends No.	5 6	6 3	8 4	10 9	12 9	18 10
Tees ,,	6 3	7 5	9 0	11 11	14 0	20 6
Red lead joints ,,	4 0	4 3	4 8	5 2	6 0	6 8
Copper tubes and fittings : gauge	19	19	18	18	18	17
Tubes and fixing to walls	2 7	3 4	4 6	5 5	6 4	9 2
Extra for lengths under 4 ft. ...	7	9	11	1 0	1 3	1 6
Brass capillary type fittings :						
Couplings — copper to copper ...	3 8	4 4	6 9	8 9	11 2	15 3
Bends— do. ...	5 10	7 1	8 11	11 7	17 2	32 3
Tees— do. ...	8 7	9 11	14 2	19 2	26 3	36 4
Stop cocks	23 7	33 1	60 2	101 2	152 3	250 4
Tank connectors ...	4 9	5 4	8 1	10 2	14 3	18 4

PLASTERER

		s. d.
Expanded metal lathing ⅜ in. mesh 24 gauge ... ... (not including hangers for suspended work)	Yd. sup.	9 0
Lime Plastering : Render, float and set	,,	10 5
Sirapite Plastering: Render in Portland Cement, Lime and Sand and set in Sirapite	,,	8 1
Sirapite Plastering: Render and set in Sirapite plaster to manufacturer's instructions	,,	8 5
Paristone Plastering : do. do.	,,	8 8
Carlite Plastering : do. do.	,,	9 8
Portland Cement : Plain face trowelled smooth ...	,,	10 5
Keenes: Render in cement and lime and set in Keenes	Yd. sup.	11 0
Extra for dubbing out ¼ in. thick 1/11, ½ in. thick 3/11 ⅜ in. Plasterboard and setting coat	,,	9 4
Narrow widths: Up to 3 in. wide add 300 per cent. Do. 3-6 in. do. 200 per cent. Do. 6-12 in., add 75 per cent.		
Labours : Arris 5½d. Fair edge 6½d. Quirk 10d.		
Plaster Moulded Cornices : 6 in. girth and under ...	Ft. run	3 3
Over 6 in. girth, add 3½d. per in.		
Tyrolean Rendering on and including Portland Cement and Sand backing	Yd. sup.	13 3
Wall Tiling : 6 in. x 6 in. white glazed ¼ in. thick ...	,,	46 0
Extra for rounded angle or birdsbeak	Ft. run	4½
do. rounded edge tile	,,	5½

GLAZIER

	Wood sashes with beads or putty s. d.
Clear sheet glass ordinary quality :	
18 oz.	1 5½
24 oz.	1 8½
26 oz.	1 11
32 oz.	2 4
Obscured glass :	
⅛ in. Figured rolled White group 1	1 11
,, ,, ,, group 2	2 3
,, ,, Standard tints	2 7½
⅛ in. Pinstripe, Hammerstripe, Reeded, Reedlyte and luminating group 3	2 4½
¼ in. Wired Cast	2 8½
¼ in. Georgian Wired Cast	2 8½
¼ in. Polished Plate Glass, G.G. Quality :	
In plates not exceeding 2 ft. sup.	6 9
,, ,, ,, 5 ft. sup.	7 9
,, ,, ,, 45 ft. sup.	9 9
,, ,, ,, 100 ft. sup.	9 8
Extra on all above :	
For glazing with screw beads ft. sup. ... ... (Excepting polished plate over 12 ft. super on which no extra is charged)	6
For glazing with metal sashes with putty	1
Glazing bedded in washleather	Ft. run 9

PAINTER

	s. d.
Limewhiting : Prepare and two coats on brick ...	Yd. sup. 1 3
Whitening : Prepare and two coats on plaster ...	,, 1 6
Washable distemper: Prepare and two coats on plaster	,, 2 1
Emulsion paints : Prepare and two coats on plaster ...	,, 3 3

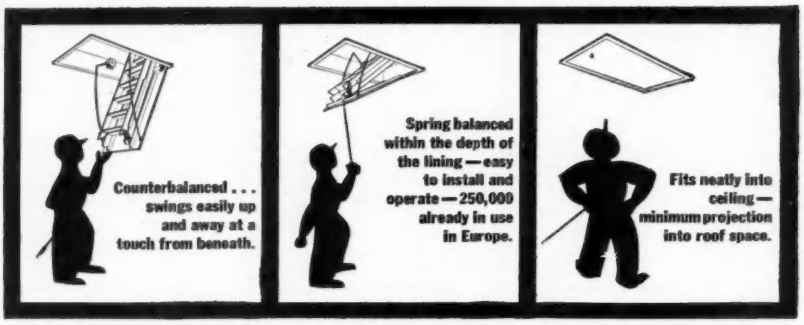
Painting with oil colours :	*Yd. super* 1 *coat*	2 *coats*	3 *coats*
	s. d.	s. d.	s. d.
Prepare and paint on plaster	2 4	4 5	6 7
On Steel :			
Plain surfaces	1 11	3 9	5 8
Roof trusses...	2 5	4 9	7 2
Metal casements divided into squares ...	3 6	7 0	10 6
do. divided into large squares ...	2 9	5 3	7 10
Opening edges ... ... Each	8	1 3	1 10
Small pipe ... ... Yd. run	6	1 0	1 5
Rainwater pipe ... ... ,,	1 0	1 11	2 9
Gutter ... ... ,,	1 4	2 6	3 8

	Knot prime and stop	*Add for each extra coat*
On Woodwork :	s. d.	s. d.
General surfaces ... ... Yd. sup.	2 10	2 4
On work not exceeding 3 in. girth Yd. run	4½	3½
Add to last for every additional 3 in. in girth	3½	2¾
Sash squares on one side ... ... Doz.	5 9	4 9
Large ,, ,, ,, ... ,,	8 10	8 4
Opening edges ... ... No.	9	8

		s. d.
Oiling Hardwood : Two coats with linseed oil... ...	Yd. sup.	1 5
Creosote : Two coats on woodwork	,,	1 7
Polishing—New Work :		
Staining and wax polishing hardwood	Ft. sup.	1 1½
Staining, bodying in and full french polishing on hardwood	,,	2 7
Old Work previously polished :		
Preparing old work and repolishing	,,	1 2
Stripping, preparing and repolishing	,,	3 2
Papering :		
Preparing, sizing and hanging lining paper	per piece	11 0
do. do. Wallpaper, p.c. 10s.	,,	20 1

THE ROTO LOFT LADDER

AN ADDITIONAL SELLING FEATURE FOR ANY HOUSE OR BUNGALOW


Counterbalanced . . . swings easily up and away at a touch from beneath.
Spring balanced within the depth of the lining — easy to install and operate — 250,000 already in use in Europe.
Fits neatly into ceiling — minimum projection into roof space.

Any house or bungalow gains in attraction when fitted with the Roto Loft Ladder, since the purchaser gets what is in effect extra space.

Easily fitted. Using a standard ceiling opening 2 ft. 2 ins. wide and 4 ft. 1 in. long, the Roto Loft Ladder can be offered as an alternative extra at moderate cost, without design changes or structural modifications. Minimum clearance in the roof space for the top of the ladder is only 2 ft. 3 ins.—no more than is needed for a landing.

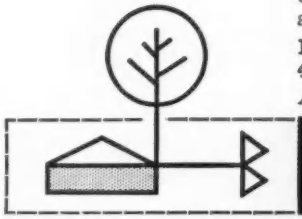
Balance springs are attached to the sides of the hatch lining and there is no gear to be fixed in the roof space. The complete unit of ladder, hatch cover and box lining, is simply installed by means of screws in the rough ceiling joist opening.

A clear saving per unit. There is a clear saving of £2 to £3 per unit by the omission of the lining and hatch cover that would otherwise be needed to give access to the roof space.

Retail price of the standard unit to suit a rough opening of 2 ft. 2 ins. wide and 4 ft. 1 in. long is £18.15.0d. carriage paid in England and Wales.

Available through Builder's Merchants or direct from the manufacturers—

WRITE FOR FREE ILLUSTRATED BROCHURE



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THE BUILDER CURRENT PRICES

THE information given on these pages has been specially compiled for *The Builder* and is copyright. It is the intention that the details given should indicate fair average prices of materials, not necessarily the highest or the lowest. The prices apply to large quantities of materials loaded at works, delivered at London Stations or at site in London Area as stated. Prices for smaller quantities ex merchant's warehouse will necessarily be higher so as to include the stocking and handling costs involved. It is recommended that the prices of materials should be confirmed by inquiry from suppliers and merchants.

AGGREGATES AND SAND

Delivered site in full lorry loads. Average of prices for Boroughs of Westminster, Paddington, Holborn and St. Pancras.

		£	s.	d.
Pit Ballast	per yd.	1	5	5
Pit Sand	,,	1	3	8
Washed Sand	,,	1	6	9
¼ in. Shingle	,,	1	4	3
¾ in. Broken Brick	,,	1	0	9
Pan Breeze	,,	1	5	0
Fine or Coarse Foamed Slag Aggregate	per ton	3	8	0

2 yds. of fine and 2.6 yds. of coarse per ton.

CEMENT, etc.

Including non-returnable jute sacks or paper bags.

		£	s.	d.
Best British Portland Cement. Standard Specification delivered Charing Cross area.				
8-ton loads and upwards, site	per ton	5	16	0
Below 8 tons down to 4 tons, site	,,	6	8	0
Below 4 tons down to 2 tons, site	,,	6	12	0
Below 2 tons down to 1 ton, site	,,	6	14	0
Rapid-Hardening Cement in 8-ton loads and upwards to site	,,	6	6	6
Below 8 tons down to 4 tons, site	,,	6	18	6
Below 4 tons down to 2 tons, site	,,	7	2	6
Below 2 tons down to 1 ton, site	,,	7	4	0
Aquacrete Water Repellent Cement. 32s. 6d. per ton on ordinary cement prices.				
Sulphate Resisting Cement. 32s. 6d. per ton on ordinary cement prices.				
Red, Buff or Khaki Colocrete in 8-ton lots	,,	8	16	0
Other colours according to colour.				
In 4-ton lots from 313s. 3d. to 783s. 3d. per ton.				
White Portland Cement	,,	14	0	9
Under 1 ton	per cwt.		17	0
417 Cement (Ultra Rapid Hardening) in 8-ton lots and upwards	per ton	7	8	6
Super Cement (Waterproof), 32s. 6d. per ton above Portland Cement.				
Cullamix Tyrolean Finish, £11 13s.3d. to £14 8s.3d. (1-ton loads and upwards).				
Ciment Fondu and Lightning Brands High Aluminous cement, 6-ton lots and up	,,	15	14	6
Stourbridge Fireclay, 6-ton loads at Railway Depot, London	,,	6	19	0
Stourbridge Fireclay, 6-ton loads (London sites)	,,	7	12	0
Moler Mortar Powder for Flue Bricks (London sites)	per cwt.	1	6	0

BRICKS

Full Loads		£	s.	d.
First Hard Stocks	per 1,000	16	19	6
Second Hard Stocks	,,	14	18	6
Mild Stocks (Kiln Burnt)	,,	11	5	0
Mild Stocks	,,	11	0	0
All loaded free into lorry at the works. The question of haulage is still very difficult and prices must be obtained from job to job.				
2½ in. Nominal Fletton Bricks to sites in W.C. district :				
Commons	,,	6	10	0
Cellular Commons	,,	6	10	0
Keyed do.	,,	6	12	0
Rustics	,,	8	12	0
Cellular Rustics	,,	8	12	0
Single Bullnose Commons	,,	8	14	6
Sandfaced	,,	9	12	0
Tuscans	,,	10	7	0
Saxons	,,	10	15	0
Golden Buffs	,,	11	2	0
Dapple Light Facings	,,	11	9	6
Heather Facings	,,	11	5	0
Best Blue Pressed Staffs (London sites)	,,	34	0	6
do. Bullnose (London sites)	,,	34	19	6
Blue Wire Cuts (London sites)	,,	29	19	6
Midhurst Lime Bricks (London sites)	,,	11	13	0
Uxbridge Whites (London sites)	,,	12	3	6
Special Purpose Sandlime Bricks (London sites)	,,	9	2	0
Best Stourbridge Fire Bricks :				
2½ in. (London stations)	,,	32	14	0
2½ in. (London sites)	,,	33	2	9
3 in. (London stations)	per 1,000	39	4	6
3 in. (London sites)	,,	39	15	0
2½ in. Moler Flue Bricks (London sites)	,,	31	0	0
2½ in. Machine-made Sandfaced Red Facings (London sites)	,,	18	19	0
2½ in. Machine-made Multi Red Facings (London sites)	,,	19	4	0
2½ in. Hand-made Sandfaced Red Facings (London sites)	,,	20	17	6
2½ in. Hand-made Sandfaced Multi-Colour Facings (London sites)	,,	20	17	6
Hand-made Sandfaced Cherry Red Facings, Berkshire district (London sites)	,,	21	5	0
Hand-made Sandfaced Multi-Colour Facings, Berkshire district (London sites)	,,	21	5	0
Rubber Bricks for gauged arches (London sites)	,,	52	5	0
2½ in. Surrey Clamp Burnt Multi Stock Facings (London sites)	,,	16	15	0
2½ in. Surrey Kiln Burnt Multi Stock Facings (London sites)	,,	18	7	6
Glazed Bricks (London sites), White, Ivory, Brown:				
Stretchers	,,	64	0	0
Headers	,,	63	0	0
Quoins, Bullnose and 4½ in. Flats	,,	80	0	0
Double Stretchers	,,	85	0	0
Double Headers	,,	77	10	0
One side and two ends	,,	87	0	0
Two sides and one end	,,	89	10	0
Splays and Squints	,,	83	0	0
Cream and Buff, £3 extra over White. Other colours, hard glaze, £8 10s. 0d. extra over White. All above prices plus 47½% for Best quality and plus 47½% less 10% for Second quality.				

PARTITION SLABS, etc.

Delivered Central London Area. (W.C. District).

Hollow Clay Partition Blocks (Keyed) Minimum lorry loads		£	s.	d.
*2½ in. 140 yds.	per yd. sup.		4	7
Building Blocks (Keyed)				
*3 in. (6 cavity) 110 yds.	,,		5	9
*4 in. (6 cavity) 90 yds.	,,		7	3
6 in. (8¾ in. × 5⅝ in.) 1,250 blocks	per 1,000	28	9	0
* Half blocks at no extra charge.				
Clinker Concrete				
2 in. 100 yds.	per yd. sup.		4	0
2½ in. 85 yds.	,,		4	7
3 in. 75 yds.	,,		5	8
4 in. 55 yds.	,,		7	0
Cranham Terra Cotta				
2 in.	,,		7	5
2½ in.	,,		8	4
3 in. Load bearing quality	,,		9	6
4 in. do. do	,,		11	6
Moler Partition Blocks				
2 in. 150 yds.	,,		12	9
2½ in. 120 yds.	,,		13	9
3 in. 100 yds.	,,		14	9
4 in. 90 yds.	,,		17	0
Lightweight Concrete Building and Partition blocks of Various Sources of Manufacture				
2 in. 100 yds.	per yd. sup.		5	4
2½ in. 80 yds.	,,		6	5
3 in. 65 yds.	,,		7	5
4 in. 50 yds.	,,		9	4
4½ in. 44 yds.	,,		10	2
6 in. 33 yds.	,,		14	5
Thermalite-Ytong Partition Blocks				
2½ in. 144 yds.	,,		7	0
Thermalite-Ytong Load-Bearing Insulating Blocks				
3 in. 120 yds.	per yd. sup.		8	5
4 in. 90 yds.	,,		11	0
5 in. 72 yds.	,,		13	9
6 in. 60 yds.	,,		16	6
8½ in. 42 yds.	,,	1	3	8
Floor Blocks and Filler Tiles				
Floor Blocks 12 in. × 12 in. delivered in full lorry-loads :				
3 in.	per 1,000	35	14	0
4 in.	,,	38	9	0
5 in.	,,	46	1	0
6 in.	,,	52	12	0
7 in.	,,	64	12	0
8 in.	,,	75	9	0
9 in.	,,	83	2	0
10 in.	,,	92	0	0
Filler Tiles in multiples of 10 tiles per 1,000 multiples :				
12 in. × 3 in. × ⅝ in.	,,	43	13	0
12 in. × 4 in. × ⅝ in.	,,	75	7	0
10 in. × 5 in. × ⅝ in.	,,	75	7	0

Fillers and Sealers ?

A basic requirement for Fillers and Sealing Compounds is that they must withstand vibration, extremes of temperature and severe weather conditions.

Engineers and Architects overseas are often confronted with particularly difficult jointing problems inherent in structures subject to movement (due, for instance, to unstable ground) and Expandite have formulated products to contend with these very problems.

Civil Engineers and Architects are cordially invited to contact us on all matters relating to filling and sealing. We can provide the precise material required, the machines for their efficient application and, without any obligation, offer sound advice and method of procedure based on years of experience in this field.

BP House, Ropemaker Street, London, E.C.2.
photograph by courtesy of BP Trading Limited
Architects: Messrs. Joseph F. Milton Cashmore & Partners

EXPANDITE LIMITED

CHASE ROAD, LONDON, N.W.10 Telephone: ELGar 4321 (10 lines) Telex 25420
ELGar 1551 (10 lines)
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36 Great North Road, Newcastle-upon-Tyne 2 Telephone: Newcastle 23992
Eire: EXPANDITE (IRELAND) LTD., Greenhills Road, Walkinstown, Dublin **Telephone: 501512**

ASSOCIATES AND DISTRIBUTORS THROUGHOUT THE WORLD

STONEWARE DRAIN PIPES, etc.

Glazed Stoneware Standard List (November, 1956).

		4 in.	6 in.	9 in.
Pipes, 2 ft. lengths	per ft.	1/8	2/6	4/6
Bends	each	5/–	7/6	20/3
Junctions	,,	8/4	12/6	27/–
Gullies with 4 in. outlets	,,	12/6	13/9	22/6

The following are the percentages to be added to the Standard List (November, 1956) prices delivered London Area.
Delivered ex Merchants Wharf or Depot.

	Over 2 tons	Over 100 pieces Under 2 tons	Under 100 pieces Under 2 tons
Best Quality ...	NET	+22½%	+27½%
BSS Best Quality...	+10% NET	+10% +22½%	+10% +27½%
Tested Quality ...	+37½% NET	+37½% +22½%	+37½% +27½%
BSS Tested Quality	+47½% NET	+47½% +22½%	+47½% +27½%

	per	£	s.	d.
3 in. Land Drain Pipes (in 12 in. lengths)	per 1,000	12	10	6
4 in. do. do.	,,	16	16	0
6 in. do. do.	,,	34	10	0
9 in. do. do.	,,	64	19	0

DAMP COURSE

		£	s.	d.
Hessian base bitumen 7 lb. per yd. sup. in 24 ft. rolls cut to wall widths in lots of £6 value and over delivered London area	per yd. sup.		3	5
Asbestos base do. 7 lb. per yd. sup. do. do.	,,		5	2
Lead lined bitumen do. 9¼ lb. per yd. sup. do. do.	,,		12	2
18 in. × 9 in. British damp course slates	per 1,000	43	8	11
14 in. × 9 in. do. do.	,,	32	8	2
9 in. × 9 in. do. do.	,,	18	18	9
18 in. × 4½ in. do. do.	,,	19	19	9
14 in. × 4½ in. do. do.	,,	15	18	3
9 in. × 4½ in. do. do.	,,	10	14	3

STONE

		£	s.	d.
Bath Stone				
Monks Park	per ft. cube		10	3
St. Aldhelm Box Ground	,,		11	6
Delivered in railway trucks at South Lambeth B.R. Western Region.				
Doulting Stone Random Blocks. Delivered London area	,,		10	10
Beer Stone. Delivered London area	,,		10	6
Portland Stone—				
Brown Whitbed in random blocks, 20 ft. average delivered in railway trucks at Nine Elms, B.R. Southern Region	,,		9	10
Yorkshire Stone—Blue Robin Hood Quality. Delivered to site London in 6-ton lots.				
9 in. × 3 in. Rubbed, weathered, throated and stolled cills	per ft. cube	4	5	10
12 in. × 6 in. do. do. do.	,,	3	1	2
12 in. × 3 in. Plain coping, twice throated	,,	2	7	6
12 in × 3 in. Weathered and twice throated coping	,,	3	3	3
14 in. × 6 in. do. do. do.	,,	2	17	0
4½ in. × 9 in. Plinth rubbed on top and face ...	,,	2	11	0
3 in. sawn two sides Slabs, random sizes	per ft. sup.		9	1
Templates and Cover Stones, 3 in., 4 in. and 6 in. thick, edges coped for rendered brickwork ...	per ft. cube	1	11	3
do. do. fair one edge for fair faced brickwork	,,	1	17	0
Hard York—				
12 in. × 2 in. Square Steps, rubbed on top and edge	per ft. run		11	0
14 in. × 3 in. Round-nosed Steps, rubbed on top and front	per ft. cube	2	18	3
12 in. × 6 in. Plain Steps, rubbed top and front	,,	2	11	0
2 in. Rubbed and Jointed Paving, given sizes ...	per ft. sup.		10	3
2 in. Sawn Paving, edges squared, in random sizes	per yd. sup.	3	12	0

TILES AND PANTILES

Delivered London area by road in 6 tons or over per 1,000.

	£	s.	d.
Machine-made Pantiles and French pattern Tiles from Lincolnshire district	35	16	6
Hand-made Pantiles Berkshire district	64	10	0
Hand-made Double Roman Bridgwater district	78	2	9
Hand-made 10½ × 6½ tiles Berkshire district	18	0	0
Machine-made 10½ × 6½ Staffordshire district	17	0	0
Hand-made Hip and Valley tiles per doz.	1	13	0
Machine-made Hip and Valley tiles do.	1	12	0
Concrete tiles 10½ × 6½	8	10	0
do. Interlocking (49S)	19	16	6

NOTE.—Breakage in transit, purchasers' responsibility.

SLATES

First-quality Slates from Penrhyn or Portmadoc, carriage paid in full truck loads to London Rate station. Per 1,000 actual.

	£	s.	d.
24 × 12	160	4	0
22 × 12	126	15	0
22 × 11	114	15	0
20 × 12	107	5	0
20 × 10	105	0	0
18 × 10	71	5	0
18 × 9	62	14	0
16 × 10	54	15	0
16 × 8	42	18	0

NOTE.—Breakage in transit, purchasers' responsibility.

TIMBER

			£	s.	d.
Softwood	Ex Wharf	per standard	£115 to £140		
Joinery quality	do.	,,	£94 — £98		
Carcassing quality	do.	,,	£112	0	0
1 in. Tongued and Grooved Flooring	do.	,,			
Hardwood			£	s.	d.
Mahogany—African S.E.	do.	per ft. cube	1	17	6
do. Honduras S.E.	do.	,,	3	5	0
Oak European S.E.	do.	,,	2	10	0
do. Japanese S.E.	do.	,,	3	0	0
do. English Logs sawn ...	do.	,,	2	0	0
Teak 8 in. average S.E. ...	do.	,,	3	17	6
Walnut African Logs sawn ...	do.	,,	1	2	6
Plywood		per			
6 mm. (¼ in.) Birch Plywood B/BB		100 sq. ft.	4	3	6
6 mm. Israeli Gaboon do. B/BB exterior grade WBP (AX100)		,,	4	5	3
18 mm. Birch Blockboard		,,	9	7	0
¾ in. Douglas Fir Plywood 96 in. × 48 in. Exterior grade WPB (AX100) solid two sides		,,	9	3	0

DOORS (in Lots I-II)

		£	s.	d.
Delivered London area.				
1½ in. 4 Horizontal Panel. Pattern 4 in. deal				
2 ft. 0 in. × 6 ft. 6 in.	each	1	16	0
2 ft. 3 in. × 6 ft. 6 in.	,,	1	17	6
2 ft. 6 in. × 6 ft. 6 in.	,,	1	18	6
2 ft. 9 in. × 6 ft. 6 in.	,,	2	0	6
2 in. do. but top panel open. Pattern 4 × G in deal				
2 ft. 6 in. × 6 ft. 6 in.	,,	2	9	0
2 ft. 9 in. × 6 ft. 6 in.	,,	2	11	6
2 in. 2 Panel top panel open. Pattern 2 × G in deal				
2 ft. 6 in. × 6 ft. 6 in.	,,	2	3	0
2 ft. 9 in. × 6 ft. 6 in.	,,	2	5	0
1½ in. Plywood Faced Flush Doors to BS459, Part 2A				
2 ft. 0 in. × 6 ft. 0 in.	,,	1	12	3
2 ft. 0 in. × 6 ft. 6 in.	,,	1	12	3
2 ft. 3 in. × 6 ft. 6 in.	,,	1	13	9
2 ft. 6 in. × 6 ft. 6 in.	,,	1	15	3
2 ft. 9 in. × 6 ft. 6 in.	,,	1	18	0
1½ in. Hardboard Faced Flush Doors				
2 ft. 0 in. × 6 ft. 0 in.	,,	1	5	6
2 ft. 0 in. × 6 ft. 6 in.	,,	1	6	0
2 ft. 3 in. × 6 ft. 6 in.	,,	1	6	6
2 ft. 6 in. × 6 ft. 6 in.	,,	1	8	6
2 ft. 9 in. × 6 ft. 6 in.	,,	1	9	6

SUNDRIES

		£	s.	d.
Delivered London area.				
1 in. Wood Wool Slabs 6 ft. 0 in. × 2 ft. 0 in. in quantities of 1 ton (89 yds. to 1 ton)	per yd.		6	2
1½ in. do. (67 yds. to 1 ton)	,,		8	0
2 in. do. (52 yds. to 1 ton)	,,		9	9½
2½ in. do. (45 yds. to 1 ton)	,,		11	3
3 in. do. (39 yds. to 1 ton)	,,		12	7½
½ in. imported or home produced insulation Board, quantities over 5,000 sq. ft.	per 100 sq. ft.	2	2	6
¼ in. Hardboard do.	,,	1	17	6
7/16 in. do. do.	,,	2	4	6
2 in. Compressed Straw Slabs, roofing quality. 6 ft., 8 ft., 9 ft., 10 ft., and 12 ft. × 4 ft.				
50–100 yds.	per yd. sup.		11	4
101–250 yds.	,,		10	10
251–750 yds.	,,		10	1
Over 750 yds.	,,		9	4
2 in. do. for partitions 4d. per yd. cheaper.				
5/16 in. Asbestos Flat Building Sheets...	,,		4	3½
¼ in. do. do. do.	,,		6	0
Roofing Felt 1-ply	,,		1	9
do. 2-ply	,,		2	2½
Best Scotch Glue in slabs	per ¼ cwt.	5	3	9
do. pearl	,,	5	3	9
Croid Glue	28 lb.	2	6	0
Impact Adhesive	per gall.	2	12	0
Cut Nails 3 in. (1-ton lots)	per ton	84	10	0
do. 4 in. and up (1-ton lots)	,,	81	0	0
Wire Nails 3 in. (4-cwt. lots)	per cwt.	4	2	1
do. 4 in. and up (4-cwt. lots)	,,	3	19	3

METALS

STEEL JOIST, ETC.

		£	s.	d.
Basis Joists—				
6 in. × 5 in., 8 in. × 5 in., 8 in. × 6 in., 10 in. × 6 in., 12 in. × 6 in., plain cut to lengths delivered London area	per ton	47	15	0
Extra for sizes				
3 in. × 1½ in. 4 in. × 1¾ in.	,,	3	10	0
3 in. × 3 in.	,,	2	10	0
4 in. × 3 in.	,,	2	5	0
10 in. × 4½ in.	,,	1	10	0
5 in. × 2½ in. 5 in. × 3 in.	,,	1	15	0
4½ in. × 1¾ in.	,,	3	5	0
5 in. × 4½ in. 7 in. × 3½ in. 13 in. × 5 in. ...	,,		15	0
6 in. × 3 in. 24 in. × 7½ in.	,,	2	0	0
6 in. × 4½ in. 7 in. × 4 in. 8 in. × 4 in.	,,	1	5	0
9 in. × 4 in. 10 in. × 5 in.	,,			
12 in. × 5 in. 22 in. × 7 in.	,,	1	0	0

METALS—*continued*

			£	s.	d.
9 in. × 7 in. / 14 in. × 5½ in. / 15 in. × 5 in. / 16 in. × 8 in. / 18 in. × 8 in.	10 in. × 8 in. / 14 in. × 6 in. / 15 in. × 6 in. / 18 in. × 6 in. / 20 in. × 6½ in.	12 in. × 8 in. / 14 in. × 8 in. / 16 in. × 6 in. / 18 in. × 7 in. / 20 in. × 7½ in.	per ton	10	0
			,,	10	0
Steel angles average price			,,	48	15	0
Steel tees average price			,,	49	15	0
Fabricated work delivered London—						
R.S. Joists cut and fitted			,,	67	19	0
Compound girders			,,	72	14	3
Stanchions			,,	78	9	9
Compound stanchions			,,	83	4	3
In Roof Work—Trusses and Purlins			,,	93	19	6
Average prices not for awkward work.						
Angle cleats and ¾ in., ¾ in. and ⅞ in. bolts average price London area			per cwt.	5	10	0
Above prices joists etc. increased by 1·1%.						

Ferro-Concrete Bars and Fabric

			£	s.	d.
Mild Steel Ferro-Concrete Bars British manufacture to BSS 785 ex. Mills. 1 in. diameter and upwards delivered nearest London station ...		per ton	40	10	0
do. do. ex. London Stock do. delivered London site		,,	49	10	0
Extras—					
¼ in. diam....		per ton extra	8	12	6
⅜ in. do.		,,	6	12	6
½ in. do.		,,	4	12	6
⅝ in. do.		,,	3	2	6
¾ in. do.		,,	1	10	0
⅞ in. and 1 in. diam.		,,		15	0
Above prices mild steel bars increased by 1·1%.					
Steel wire mesh reinforcing fabric to BSS 1221A.					
Ref. No. 106	7.88 lbs. ...	per sq. yd.		5	2½
,, ,, 109	4.71 ,, ...	,,		3	0½
,, ,, 113	1.83 ,, ...	,,		1	8½
,, ,, 122	7.32 ,, ...	,,		4	10½
,, ,, 125	4.32 ,, ...	,,		2	10½

Mild Steel Tubes

Tubes to BSS 1387. Fittings BSS 1740.

Basic List Prices

	¼ in.	⅜ in.	½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
Tubes ... ... per ft.	9¼	10	1/–	1/2½	1/9	2/3	2/8	3/9
Bends ... ... each	1/7	1/9	2/–	2/6	3/8	5/5	6/2	10/7
Elbows, square ,,	1/8	1/10	2/2	2/6	3/–	4/4	5/2	8/6
do. round ,,	1/10	2/–	2/4	2/10	3/4	4/8	5/8	9/4
Tees ... ... ,,	2/–	2/2	2/6	3/2	3/8	5/–	6/2	10/2
Crosses... ... ,,	4/4	4/8	5/6	6/6	8/2	11/–	13/2	21/–
Sockets, Plain ,,	6	6	8	10	1/–	1/4	1/9	2/6
do. Diminished ,,	8	10	1/–	1/2	1/6	2/–	2/8	4/–
Backnuts ... ,,	4	4	6	7	10	1/–	1/4	2/2

Malleable Fittings

	¼ in.	⅜ in.	½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
Elbows, round each	8½	8½	9½	1/2½	1/8½	2/7½	3/6	5/–
Tees ... ... ,,	9½	9½	1/–	1/4½	2/–	2/9½	4/–	5/6
Crosses... ... ,,	1/2½	1/2½	1/4½	2/–	2/9½	3/7½	5/2½	7/2½
Sockets... ... ,,	5½	5½	7	9½	1/–	1/7½	2/2½	3/1½
Backnuts ... ,,	3	3	3½	4½	5½	7½	10½	1/5½

Discounts from List prices as follows :—

Galvanised Tube—

	Under 1 ton	Over 1 ton
Light	−37 %	−38½%
Medium	−33 %	−34½%
Heavy	−25½%	−27 %

Black—

	Under 1 ton	Over 1 ton
Light	−47 %	−48½%
Medium	−43 %	−44½%
Heavy	−35½%	−37 %

W.I. Fittings

Light	−24½%
Heavy	−20½%

Malleable Fittings

Malleable List −14%+40%

Malleable Fittings

Malleable List −14%

C.I. Half-Round Gutters

Delivered London per yd. in 6 ft. lengths.

	Gutters	Nozzles	Stop Ends
3 in.	4/4½	3/10	1/1
3½ in.	4/9	4/2	1/1
4 in.	6/1½	4/9	1/8
4½ in.	6/9	5/4	2/–
5 in.	7/6	5/9	2/4

C.I.O.G. Gutters

Per yd. in 6 ft. lengths :

	Gutters	Nozzles	Stop Ends
3 in.	5/7½	5/1	1/4
3½ in.	6/3½	5/1	1/8
4 in.	6/11½	5/4	2/–
4½ in.	7/6	6/1	2/4
5 in.	8/2½	7/–	2/8

C.I. Rain-Water Pipes

	Pipes	Bends	Branches
2 in.	9/4	4/9	6/10
2½ in.	9/4	5/4	9/2
3 in.	10/6	6/8	9/11
3½ in.	11/10	7/10	11/11
4 in.	13/9½	9/6	14/2

L.C.C. Coated Soil Pipes

2 in.	10/7	8/2	9/11
2½ in.	11/2	9/1	12/4
3 in.	12/6½	9/11	14/8
3½ in.	14/–½	12/4	17/1
4 in.	15/11½	13/10	20/3

Above prices for gutters, rain-water and soil pipes for under 5-cwt. lots only. Lots over 5 cwt. see List No. 3300, dated February 1, 1955, plus 32½% and tonnage allowance. 4-ton lots 5%. 2-ton lots 2½%.

L.C.C. Coated Drain Pipes

	£	s.	d.
4 in. diameter in 9 ft. lengths ... ... per yd. run	1	11	1
6 in. do. do. ... ... ,,	2	5	6
4 in. diameter bends ... ... each	1	0	6
6 in. do. do. ... ... ,,	2	14	9
4 in. diameter branches ... ... ,,	1	16	6
6 in. do. do. ... ... ,,	4	7	6

Above prices for any quantity but under 5 cwt. carriage extra.

Pitch Fibre Drain Pipes

2 in. diameter in 5 ft., 5 ft. 6 in. or 8 ft. lengths including couplings ... ... per ft. run	1	6½	
3 in. do. ... ... ,,	1	10½	
4 in. do. ... ... ,,	2	6	
5 in. do. ... ... ,,	4	1½	
6 in. do. ... ... ,,	5	0½	
4 in. diameter short radius ¼ bends ... ... each	17	9	
4 in. do. do. ⅛ bends ... ... ,,	12	11	
2 in. diameter 6 ft. radius bends (5 ft. lengths) ,,	17	0	
3 in. do. do. do. ,,	19	8	
4 in. do. do. do. ,,	1	7	4
5 in. do. do. do. ,,	2	4	0
6 in. do. do. do. ,,	2	14	6

Above prices for loads of £60 and over.
Loads £25 to £59 19s. 11d. Plus 10%
Loads under £25 ... Plus 15%

Asbestos Rain-Water Pipes and Fittings

All less 17½% discount.

	2 in.	2½ in.	3 in.	4 in.
Pipes, 6 ft. lengths ... ... per yd.	4/7	4/10½	5/11	7/10
Shoes ... ... each	3/–	3/3	3/10	5/2
Single Branches ... ... ,,	4/8	5/6	6/7	9/2
Bends, squares or obtuse ... ,,	3/3	3/7	4/8	6/7
Swan Necks, 4½ in. proj.... ,,	3/7	4/8	5/2	7/3
do. 6 in. do. ... ,,	3/10	5/2	5/10	7/10

Asbestos O.G. Gutters and Fittings

	4 in.	4½ in.	5 in.	6 in.
Gutters, 6 ft. lengths ... per yd.	4/4	4/9½	5/9	6/10½
Drop ends ... ... each	3/6	4/–	4/9	5/5
Stop ends ... ... ,,	1/1	1/2	1/3	1/5
Angles ... ... ,,	3/7	4/1	5/–	5/10
Nozzles ... ... ,,	3/6	4/–	4/9	5/–
Union Clips ... ... ,,	1/9	2/1	2/6	2/11

Asbestos Half-Round Gutters and Fittings

	per	3 in.	4 in.	4½ in.	5 in.	6 in.
Gutters, 6 ft. lengths	yd.	3/0½	3/7½	3/8½	4/4½	6/1
Drop ends	each	2/6	3/–	3/3	3/7	5/2
Stop ends	,,	1/–	1/1	1/2	1/3	1/5
Angles	,,	2/10	3/3	3/7	3/10	5/2
Nozzles	,,	2/6	3/–	3/3	3/7	5/2
Union Clips	,,	1/3	1/4	1/5	1/7	2/5

	Per ton basis in London £	s.	d.
Iron—Staffordshire Crown Merchant Quality	52	17	6
Mild Steel Bars	47	18	0
Mild Steel Hoops	49	10	0

	Ex Merchant's Stock per ton Two-ton lots £	s.	d.
Soft Sheets C.R. and C.A.—			
20 gauge	63	0	0
24 gauge	65	10	6
26 gauge	68	11	0
Galvanised Corrugated Sheets, 6-ft. to 9-ft.—			
20 gauge	70	18	0
24 gauge	74	9	0
26 gauge	79	15	0
Galvanised Flat Sheets C.R. and C.A.—			
20 gauge	72	8	6
24 gauge	75	19	0
26 gauge	81	5	0

ALUMINIUM AND ALUMINIUM ALLOYS

(Base Prices)	£	s.	d.
Sheet BS 1740 S1C 18 SWG (36 in. wide)... ... per lb.		3	0½
Sheet BS 1470 NS3 Utility 18 SWG (36 in. wide) ,,		2	11½
Coiled strip BS 1470 S1C 18 SWG (24 in. wide) ,,		2	11½
Coiled strip BS 1470 NS3 Utility 18 SWG (24 in. wide)... ... ... ,,		2	11
Coiled strip high purity, 22 SWG (12 in. wide) ,,		3	2
Corrugated sheet BS 1470 NS3 Circular Profile 8 ft. × 32 in. × 20 SWG ... ... per sheet	1	14	1
Corrugated sheet BS 1470 NS3 Industrial Profile 8 ft. × 31½ in. × 20 SWG ... ... ,,	1	19	10
Corrugated sheet BS 1470 NS3 Mansard Profile 8 ft. × 31½ in. × 20 SWG ... ... ,,	1	13	1
Extruded section BS 1476 E1C simple moulding per lb.		2	10½
Extruded section BS 1476 E1C 1 in. diam. round ,,		2	8
Extruded section BS 1476 HE19WP simple angle ,,		3	2
Extruded section BS 1476 HE19WP 1 in. diam. round ... ... ,,		3	1
Tubing BS 1471 T1C 1¼ in. O/D × 20 SWG ... ,,		4	8
Tubing BS 1471 HT19WP 1½ in. O/D × 20 SWG ,,		6	3

PLUMBERS' BRASS WORK, etc.

Delivered in London area.

All per dozen	B.S.S. ¼ in.	⅜ in.	1 in.	1¼ in.	1½ in.	2 in.
Screwdown bib cocks Crutch head for iron...	87/–	128/–	—	—	—	—
Toilet bib cocks for iron ...	109/–	158/5	—	—	—	—

PLUMBERS' BRASS WORK, etc.—*continued*

All per dozen	¼ in.	⅜ in.	1 in.	1¼ in.	1½ in.	2 in.
Screwdownstopcocksforiron	66/–	95/9	188/–	363/–	522/6	917/6
do. with two unions for lead	89/–	132/–	234/4	472/–	623/6	1,389/6
Double nut boiler screws ...	18/8	26/5	47/6	48/6	67/–	93/6
Heavy Croydon ball valves	77/–	193/6	312/5	568/8	734/10	—
Plumbers' union brass lead to iron	19/6	23/6	38/6	52/10	70/6	165/–
	1½ in.	1¾ in.	2 in.	3 in.	3½ in.	4 in.
Caps and Screws	33/–	40/8	59/6	92/5	118/10	155/3
Brass Sleeves	—	31/11	31/11	56/2	74/10	91/5
	1½×6 lb.	1½×6 lb.	2×7 lb.	3×7 lb.		
Lead P. trap with brass cleaning screws	68/6	85/6	137/–	233/9		
Lead S. trap do. do.	82/9	102/9	168/3	302/3		

Solder :		s.	d.
Plumbers' ...	1 cwt. lots 320/–	14 lb. lots per lb.	3	7
Tinmen's	,, ,, 404/–	,, ,, ,,	4	5
Blow pipe ...	,, ,, 407/–	,, ,, ,,	4	6

Copper Tubes and Sheets

Copper tubes BSS 659/1944 on the basic price of 27d. per lb. plus gauge and manufacturing extras as follows. Minimum quantities, 10 cwt.

	Extra d.	Total per lb. d.	Approx. per ft. d.
¼ in.×19 gauge	16½	43½	11⅛
⅜ in.×19 ,,	14⅜	41⅜	16½
1 in.×18 ,,	12⅞	39⅞	24¾
1¼ in.×18 ,,	12¼	39½	29⅝
1½ in.×18 ,,	12¼	39½	35½
2 in.×17 ,,	13⅝	40⅝	57½

Small Quantity extras :

10 cwts. to 5 cwts.	plus ½d. per lb.
5 cwts. to 2 cwts.	,, 1d. ,,
2 cwts. to 1 cwt.	,, 2d. ,,

	£	s.	d.
Rolled Copper sheets up to 48 in. wide, basic price plus gauge and manufacturing extras	263	10	0

Zinc

		£	s.	d.
Sheet Zinc, 10 gauge (25 SWG),	5 cwt. lots upwards per cwt.	8	6	6
,, ,, 12 gauge (23 SWG),	,, ,, ,, ,,	8	4	0
,, ,, 14 gauge (21 SWG),	,, ,, ,, ,,	8	2	9

Brass Tube

Brass tubes, basic price, plus gauge and manufacturing extras	per lb.	1	9½

LEAD SHEET AND PIPES

Basis selling price to one address in London or Home Counties :

		£	s	d.
Lead Sheet, English, 3½ lb. substance and upwards	per ton	101	0	0
,, Water Pipe, in coils	,,	103	5	0
Lead Soil Pipe, 10 ft. or over 2 in. to 4 in. in dia.	,,	104	15	0
,, ,, ,, over 4 in. dia.	,,	106	15	0
,, Gas or Untinned Compo pipe...	,,	104	15	0

5 cwt. lots and over less 6d. per cwt. off basic prices.
Extras over Basis for quantities under 5 cwt. :

3 cwt. and under 5 cwt.	per cwt.	4	0
1 cwt. do. 3 cwt.	,,	6	0

Smaller quantities than 1 cwt. priced specially.
Supplying sheet lead and lead pipes to less than basis weights and cutting to sizes less than basis charged extra according to current trade schedule.
Allowance for Old Lead, collected, £53 0s. 0d. per ton weighed at buyer's works.

PLASTER, etc.

		£	s.	d.
Coarse Pink in 1-ton loads and over delivered on site	per ton	8	11	3
do. White do. do. do.	,,	9	0	9
Sirapite Coarse BSS 1191 Class C do.	,,	9	2	9
do. Fine do. do. do.	,,	9	10	6
do. Browning BSS 1191 Class B do.	,,	9	2	9
do. Board Finish do. do.	,,	9	2	9
Blue Lias Lime, in 6-ton loads	,,	6	17	6
Hydrated Lime (Grey) in 6-ton loads	,,	6	2	0
do. (White) do.	,,	6	12	0
Lump Lime (Grey) do.	,,	5	19	0
do. (White) do.	,,	6	6	6
White Keen's or Parian Cement, in 1-ton loads ...	,,	12	7	6
Pink Keen's or Parian Cement, in 1-ton loads ...	,,	12	2	3
Granite Chips, in 6-ton loads	,,	2	6	9
Hair	per cwt.	4	17	6
Gypsum Plaster Lath or Base Board, ⅜ in. thick 600 yds. and over in one delivery. Delivered site	per yd.	2	2½	
1,200 yds.	,,	2	1½	
do. Insulating do. ½ in. thick, 600 yds. and over in one delivery. Delivered site	,,	2	8	
1,200 yds.	,,	2	7	
Gypsum Plaster Wall Boards, 3 and 4 ft. wide 6 to 12 ft., ½ in. thick, 600 yds. and over in one delivery. Delivered site	,,	2	5½	
1,200 yds.	,,	2	4½	
do. Insulating do. ⅝ in. thick, 600 yds. and over in one delivery. Delivered site	,,	2	11	
1,200 yds.	,,	2	10	

PAINTS AND DISTEMPER

Delivered London area.		£	s.	d.
Ceiling Distemper	per cwt.	1	7	6
Washable Distemper	,,	5	18	0
Gloss Paint	per gal.	2	18	0
Super Snowcem cement paint (in 1 cwt. drums) ...	per cwt.	5	0	0

Lead Products and Oils

		£	s.	d.
Ground White Lead, in 1 cwt. kegs	per cwt.	8	7	6
Genuine White Lead Paint, 1-19 gal. lots in 1 gal. tins	per gal.	3	6	6
Genuine Red Lead, Dry, (1 cwt. lots)	per cwt.	6	17	0
Genuine Linseed Oil Putty, 1 cwt. keg	,,	2	13	6
Size XD quality 28 lb.	per tin		9	0
Raw Linseed Oil (5 gal.) drums extra	per gal.		16	9
Boiled Linseed Oil (5 gal.) do.	,,		17	8

Sundries

Turpentine substitute (5 gal.) drums extra ...	,,	5	4½
do. do. (40 gal.) do.	,,	4	8½
Solignum, Brown (5 gal. cans) Exterior	,,	10	0
Creosote (40 gal. barrels)	,,	2	3
Paste Powder (1 lb. packets)	per lb.	2	4
White Lining Paper	per piece	1	4

VARNISHES, etc.

Delivered London area.		£	s.	d.
Oak Varnish, Outside or Inside	per gal.	2	0	0
Oak, Pale Copal do. do.	,,	2	0	0
Hard Drying Oak for Inside	,,	2	5	0
Crystal Paper Varnish do.	,,	2	8	0
Eggshell Flat Varnish do.	,,	2	2	0
Finest Carriage Varnish	,,	2	7	0
Front Door Varnish	,,	2	4	0
Japan Gold Size	,,	1	12	0
Black Japan	,,	1	16	0
Brunswick Black	,,	1	12	0
Berlin Black	,,	1	10	0
Terebene	,,	1	12	0
Knotting (1 gal. bottles free)	,,	1	15	0
French and Brush Polish (do.)...	,,	1	15	0

GLASS

Delivered London area.		s.	d.
18 oz. Sheet Glass Ordinary Glazing Quality—Cut Sizes...	per ft. sup.		10
24 oz. do. do. do. do.	,,	1	0½
26 oz. do. do. do. do.	,,	1	3
32 oz. do. do. do. do.	,,	1	7½
¼ in. Rolled Plate...	,,	1	3½
⅜ in. Rolled and Rough Cast...	,,	1	6½
½ in. do. do.	,,	1	7½
⅛ in. Figured Rolled and Cathedral, Standard patterns—			
White Group 1	,,	1	3½
do. Group 2	,,	1	9½
do. Standard Tints	,,	2	1½
do. Special Tints	,,	7	3
⅛ in. Pinstripe, Hammerstripe, Reeded, Reedlyte and Luminating Group 3	,,	1	8½
⅛ in. Wired Cast up to 50 in.	,,	1	10½
¼ in. do. do. 50 in. to 72 in.	,,	2	2½
½ in. Georgian Wired Cast	,,	1	11
Hollow Glass Blocks—			
P.B.2 Cross reeded 5¾×5¾×3⅞ in.	each	3	9
P.B.3 Broad reeded 7¾×7¾×3⅞ in.	,,	5	9
P.B.32 Cross reeded 7¾×7¾×3⅞ in.	,,	5	9
P.B.4 Prismatic 7¾×7¾×3⅞ in.	,,	6	6
P.B.5 Flemish 7¾×7¾×3⅞ in.	,,	5	9
P.B.6 Boomerang 7¾×7¾×3⅞ in.	,,	6	6
Half Size Blocks—			
P.B.32 Cross reeded 7¾×3¾×3⅞ in.	,,	4	10
Radiused Corner Blocks to match up with—			
P.B.2 Cross reeded	,,	8	1
P.B.3 Broad reeded	,,	9	8
P.B.32 Cross reeded	,,	9	8
P.B.2, P.B.3, P.B.32 are also supplied in Light Diffusing Blocks at same price.			
¼ in. Polished Plate Glass, G.G. quality—			
In plates not exceeding 2 ft. sup.	per ft. sup.	4	7
,, ,, ,, 5 ft. sup.	,,	5	7
,, ,, ,, 45 ft. sup.	,,	7	6
,, ,, ,, 100 ft. sup.	,,	7	6
¼ in. Polished Plate, extra sizes, i.e., plates exceeding 100 ft. sup. or 160 in. one way or 96 in. both ways. G.G. quality—Not exceeding 135 ft. sup. or 240 in. one way or 130 in. both ways ...	,,	11	4
Not exceeding 180 ft. sup. or do.	,,	15	0

Plates exceeding 180 ft. sup. prices on application.
Substances other than ¼ in. Polished Plate at Special Prices.
Quantity Tariff—Sheet and Sundry Glass.
The following prices apply to minimum quantities of one size and one pattern delivered by the manufacturer to one site at one time.

Description of Glass—	Minimum quantity	per ft. sup. s.	d.
18 oz. sheet O.Q.	3,000		7½
24 oz. ,, ,, ...	2,000		9½
26 oz. ,, ,, ...	2,000		11½
32 oz. ,, ,, ...	2,000	1	3½
¼ in. Rolled Plate...	1,000		10½
⅛ in. Figured Rolled and Cathedral Standard Patterns, White Group 1	1,000		10½
do. Group 2	1,000	1	2½
⅛ in. Pinstripe, Hammerstripe, Reeded, Luminating and Spotlyte Group 3	1,000	1	2½
⅜ in. Rolled Plate or Rough Cast	2,000	1	2
½ in. do. do.	2,000	1	2½
⅛ in. Wired Cast, Hexagonal up to 50 in. ...	2,000	1	5
¼ in. do. do. do 50 in. to 72 in. ...	2,000	1	9
½ in. Georgian Wired Cast	2,000	1	5½

THE BUILDER RATES OF WAGES

AS FROM OCTOBER 2nd, 1961. (Every endeavour is made to ensure accuracy but we cannot be responsible for errors.)

1. Craftsmen and Labourers.

Region	Craftsmen	Labourers
	s. d.	s. d.
England & Wales (Grade A) ...	5 6	4 10½
London	5 7½	5 0
Liverpool and District ...	5 7½	5 0
Scotland... ...	5 6	4 10½

2. Apprentices.

Age	Per cent of Craft Rate	London and Liverpool Dist.	England, Wales (Grade A)
		s. d.	s. d.
15	25	1 5	1 4½
16	33½	1 10½	1 10
17	50	2 9½	2 9
18	62½	3 6½	3 5½
19	75	4 2½	4 1½
20	87½	4 11½	4 9½

3. Young Male Labourers.

Age	Per cent of Craft Rate	London and Liverpool Dist.	England, Wales and Scotland
		s. d.	s. d.
15	33½	1 8	1 7½
16	45	2 3	2 2½
17	66⅔	3 4	3 3
18	100	5 0	4 10½

NORTHERN IRELAND is not included; rates fluctuate so much from district to district that reference should be made to local offices.
WATCHMEN.—The rates per shift for watchmen engaged on building sites is 30s. 6d. in London and Liverpool District, and 29s. 3d. in the provinces.
FEMALE OPERATIVES.—In all districts throughout the country except in Scotland the rate of wages for women, aged 19 and over, engaged in craft processes is 4s. 7½d. per hour. Women engaged on work other than craft processes, 4s. 3½d. per hour. In Scotland the rate for the woman craftsman is 4s. 10½d. after a probationary period, and the woman labourer, 4s. 4½d.

Softening the Blows

Good Public Relations by Builders

From a Correspondent

LEADERS of the industry have been at pains in the last year or two to bring home to their members the unpleasant home truth that building's public 'image,' to use the current public relations jargon, is by no means as favourable as it should be. Nothing probably causes more irritation than excessive noise, especially during the night, and Holland & Hannen and Cubitts Ltd., who are engaged in constructing the £3m. Cromwell Road Air Terminal, where work has to proceed during the small hours when no trains are running, have shown the imagination to send people living in the vicinity a personal letter apologising in advance for the inevitable inconvenience.

The firm's project manager, Mr. W. J. O. Kerr, says in his letter: 'Building the new terminal on a site bounded by three railway lines presents quite a few problems and certain noisy operations are inevitable. We have therefore planned our work in such a way that we carry out the noisier operations during daytime as far as possible. For some loading jobs, however, we have to cross the electric tracks and, in the public's interest, this has to be done when the trains are not running—between 1 a.m. and 4 a.m. There will be some other operations which we cannot avoid carrying out during the night, much as we should like to.

'There is literally no other way of arranging our work, but again, wherever possible we are trying to reduce noise. For example, we are investigating the possibility of fitting special silencer devices to exhaust pipes of machinery. Although this will reduce plant efficiency, we feel this is well worth while.'

Commenting on his action, Mr. Kerr says: 'As a married man with four children I know only too well that building work is bound to cause some inconvenience to residents. However, we are under contract to construct a very fine building in a certain time and to a fixed design. Therefore we have little choice of plant or materials and, moreover, we have to fit in with London Transport's timetables. We cannot avoid working at night occasionally, but we are certainly keeping down noise. We hope residents will bear with us in our efforts and I am sure when they see the completed building they will agree it is a great credit to their neighbourhood.' Such efforts by builders to explain their work to the public can do nothing but good, and Cubitts are to be congratulated on the lead they have set the industry in this matter of reducing noise to a minimum.

New Companies

THE FOLLOWING NEW COMPANIES, registered in England, have been announced by Jordan and Sons, Ltd., company registration agents.

MORGAN BROS. (CONCRETE PRODUCTS) LTD.—Regd. September 12, 1961. Barclays Bank Chbrs., Aberdare. Secy.: T. R. Morgan. Nom. cap.: £100.

F. G. HARMER & SON LTD.—Regd. Sept. 12, 1961. 34 North Walsham-rd., Norwich. Bldrs. Nom. cap.: £5,000.

FIRST AVENUE CONSTRUCTION CO. LTD.—Regd. Sept. 12, 1961. Bldrs., etc. Nom. cap.: £100. Dir.: S. E. Newman, 408 Strand, WC2.

SAINSBURY (BUILDERS) LTD.—Regd. Sept. 12, 1961. 34 Heol Iscoed, Rhiwbina, Cardiff. Secy.: J. P. Sainsbury. Nom. cap.: £1,000.

CLARK BROS. (SWINDON) LTD.—Regd. Sept. 13, 1961. Secy.: D. E. G. Wing. Bldrs., bldrs.' mchts., etc. Nom. cap.: £25,000.

CLEVELAND DECORATORS LTD.—Regd. Sept. 13, 1961. 7 Kings-rd., North Ormesby, Middlesbrough. Secy.: F. Emmerson. Nom. cap.: £100.

MARK CONSTRUCTION CO. (INDUSTRIAL DEVELOPMENT) LTD.—Regd. Sept. 13, 1961. Secy.: D. E. G. Wing. Bldrs., etc. Nom. cap.: £100.

PORTABLE BUILDINGS (FORDHAM) LTD.—Regd. Sept. 13, 1961. Headgate-court, Colchester, Essex. Secy.: J. H. Eldridge. Nom. cap.: £1,000.

NORTH BEDFORDSHIRE BUILDING CO. LTD.—Regd. Sept. 13, 1961. 23 Goldington-rd., Bedford. Secy.: M. R. Chettleburgh. Nom. cap.: £1,000.

FLINTON BROS. LTD.—Regd. Sept. 13, 1961. 82-83 Newborough, Scarborough. Secy.: S. E. Flinton. Bldrs., etc. Nom. cap.: £2,000.

WALLS & KNIGHTS LTD.—Regd. Sept. 14, 1961. 29 Greenfields-rd., Horley, Surrey. Secy.: D. Prichard. Bldrs., etc. Nom. cap.: £1,000.

KEITH HARRIS (BUILDERS) LTD.—Regd. Sept. 15, 1961. 82 Holton-rd., Barry, Glam. Secy.: Maddalena E. Harris. Nom. cap.: £100.

T. SLOYAN & SONS (BUILDERS) LTD.—Regd. Sept. 15, 1961. 111 Leyfield-rd., West Derby, Liverpool. Secy.: Winifred M. Sloyan. Nom. cap.: £300.

EMERY (CONTRACTORS) LTD.—Regd. Sept. 15, 1961. 293 London-rd., Hadleigh, Essex. Secy.: Enid J. Emery. Bldrs., etc. Nom. cap.: £100.

A. E. HURRICS LTD.—Regd. Sept. 15, 1961. 17 Fleet-st., EC4. Bldrs., etc. Nom. cap.: £100. Sub.: Eric W. Dykes, 47a Madeley-rd., Ealing, W5.

PETTS WOOD PROPERTY COMPANY LTD.—Regd. Sept. 15, 1961. Bldrs., etc. Nom. cap.: £300. Sub.: Matthew Gibb, 14 Gray's Inn-sq., WC1 (solr.).

W. H. STATTERS (BUILDERS LEYLAND) LTD.—Regd. Sept. 15, 1961. 15 Meadow-st., Leyland, Lancs. Secy.: Winifred L. Bond. Bldr. contr. etc. Nom. cap.: £1,500.

Female Operatives' Rates

AT ITS ordinary meeting on July 20 the National Joint Council for the Building Industry made amendments to National Working Rule 1(1)—Female operatives. On page 11, paragraphs (i) and (ii) should, from November 6, read as '(i) The standard rate for Women aged 19 and over engaged on craft processes shall be 85 per cent of the current Grade A standard rate for craftsmen. (ii) The standard rate for Women aged 19 and over engaged on work other than craft processes shall be 85 per cent of current Grade A rate for labourers.' On page 12 the paragraph 'The foregoing rates shall be subject to the same adjustment as may be made from time to time in the Grade A Standard Rate of craftsmen.' should be deleted. The date, November 6, is merely the date when the revised rule is formally embodied in the joint agreement. No change in wages takes place on that date, neither is there any change from October 2 other than the changes shown in the table at the head of this page.

TECHNICAL REVIEW

This Review of plant, equipment and materials—in most cases new or with new features—is intended to give brief details only of the products mentioned. Notices are based on data supplied by the manufacturers. Additional information and prices can be obtained either direct or by using the prepaid Readers' Service form which appears on page 168 of this issue. The form can be used for more than one inquiry.

1. Domestic Equipment

As a result of joint enterprise on the part of two British companies, a refrigerator with an entirely separate DEEP FREEZE is expected to be on the market early in 1962. The total capacity of the model is 6½ cubic ft., including the independent freezer compartment which has a capacity of 1 cubic ft. A top opening pressure sealed lid gives easy access to the compartment and prevents cold air loss, an important feature to the maintenance of sub-zero temperatures. The actual temperature of the food stored is constantly maintained between −2° and −6° F which is below the level recommended for the long term storage of frozen food (6 months or more).

The home food freezer rarely needs to be defrosted; about once every six months is sufficient. The finned evaporator in the normal refrigerator cabinet is automatically defrosted. The defrost water is gathered in a removable container and requires periodic emptying only.

Both companies will market the new refrigerator under their own brand and model names with difference of styling and finish.

Simplex Electric Co. Ltd.,
Creda Works, Blythe Bridge, Staffs,
and
Tricity Cookers Ltd.,
Thorn-hse., Upper St. Martin's-lane,
London, WC2.

2. Flooring

A new type of jointless FLOORING OVERLAY, which gives good resistance to abrasion where spillage of oils, petrol and water occur, is now on the market. Basically it is a polymer emulsion blended with a cement mix. It is laid as a ½ in. screed over worn concrete or wooden flooring without hacking or keying the old floor. The bonding strength to the sub-floor is excellent and the resulting surface is non-slip and dustless. A factory floor so treated can be used within 48 hours and this should lead to considerable savings in the production time usually lost when old floors are removed and new ones laid.

Stonhard Co. Ltd.,
Berger House, Berkeley Sq., London, W1

3. Footwalks

An interesting aspect of the construction of the Forth Road Bridge is the provision of twin TEMPORARY FOOTWALKS to enable the main cables to be spun and suspenders for the deck sections to be fitted. Safety is the most important consideration in the construction of these twin footwalks, because the two main towers rise to 512 feet above sea level,

Work on the Forth Road Bridge

and high wind pressures have to be withstood. The footwalks are floored with specially produced Weldmesh panels and supported by eight multi-strand cables of 1 in. diameter, each cable being made up of 19 separate .16 in. diameter wires. The side panels are secured to hand ropes 3 ft. 6 in. above the footwalk. Seven cross bridges of cross braced tubular steel section connect the footwalks.

Some stretches of the footwalks will have an incline of 23°, and to assist the men working on the main cables, timber stringers of 2½ in. x 1 in. section will be secured to the mesh at intervals of 1 ft. 6 in. on the steeper sections and at 2 ft. 6 in. and 5ft. centres elsewhere. The timber stringers will also prevent friction between the wires forming the main cables and the footwalk. 'U' bolts are used to secure the mesh to the supporting cables, and later, holes will be cut in the Weldmesh flooring through which the suspenders for the deck sections will be passed. The total span of these twin footwalks will be more than 13,000 feet—nearly 2½ miles in length.

The BRC Engineering Co. Ltd.,
Stafford.

4. Lighting

A considerable advance in incandescent electric lighting is made possible by a new miniature iodine-filled FILAMENT LAMP.

The principle of the iodine lamp is not new, but the technology which has made it a commercial proposition has only been developed in the last few years. So far it has only been successfully used in quartz bulbs with a tungsten filament. This excludes it at present from competition in the field of mass produced low wattage bulbs. The principle is that the addition of a trace of iodine vapour to the argon filling sets up a regenerative cyclic reaction. This continuously removes deposits of evaporated tungsten from the bulb wall and returns it to the filament. It has thus become possible to make high power filament lamps in very small sizes without the blackening which would occur in small lamps of normal construction. The iodine process also means that the light output of a lamp stays more nearly constant throughout its life.

The first applications of the new principle can be seen at Luton Airport in a glide approach indicator system. Here, 96 lamps of 6.6 amp 200 watt are in use and giving great satisfaction. They give 15 per cent more light than the lamps in standard use on airfields and have 2½ times the life. They will also give a great saving in maintenance labour costs and replacements. Two further forms of the iodine lamp are in the process of development.

The General Electric Co. Ltd.,
Osram Lamp Division,
East Lane, Wembley, Middlesex.

5. Plumbing

A complete range of components for a PVC RAINWATER SYSTEM has been marketed under the trade name 'Aspect.' The system has been specially designed for the material used. It is easy to fix, is ⅛ the weight of cast iron, and should require no painting; the standard colour—medium blue grey—has been chosen to suit any colour scheme. A range of black components is to be marketed in January, 1962. Gutters are 4 in. half round in 6 and 12 ft. lengths, and downpipes are 2½ in. diameter fixed at 6 ft. centres by holders which drop into tapered fixing brackets screwed to the wall. Joints in the gutter are made at the brackets and are sealed with a neoprene strip. The system can be connected to cast iron and asbestos cement.

Universal Asbestos Manufacturing Co. Ltd.,
Tolpits, Watford, Herts.

The 'Aspect' pvc rainwater system manufactured by Allied Structural Plastics Ltd. and distributed by the Universal Asbestos Co. No cement or caulking compound is needed in fixing.

News in Brief

Carpentry and Joinery Competition

DETAILS have been announced by the Worshipful Company of Carpenters of its annual competition for an advanced piece of work in carpentry and joinery. The task set for this fifth competition, which is open to any craftsman in the United Kingdom and Australia, is a portion of a tester—a wooden canopy suspended above an altar in a church—with moulded bars and inlaid panels. Prizes of £50 and £25 will be awarded for the pieces placed first and second respectively, and each of the other exhibits selected for final adjudication in London will be awarded £5. All prizewinners will receive diplomas. Applications for entry must in the first instance be sent to the Clerk of the Worshipful Company of Carpenters, Carpenters Hall, 1 Throgmorton-avenue, London, EC2, not later than October 31. Work submitted must be received at provincial centres of the Incorporated British Institute of Certified Carpenters by July 1, 1962.

Rapid Building Demonstration

A BUILDING of 1,800 sq. ft. is to be erected in four hours in a demonstration on October 11, on the site of the Old Assize Courts, Great Ducie-street, Manchester. The manufacturer, Terrapin Ltd., will use a team of six men and, after erection, will dismantle the building in two hours.

Bognor Regis Development

BOGNOR REGIS UDC on September 26 approved the recommendation of its special purposes committee and reduced to two the short list of developers for the proposed £10m. redevelopment of Bognor's seafront. They are Messrs. Page Johnson, of Birmingham, and Bernard Sunley Investment Trust (Management) Ltd., the company which has been responsible for the big Fitzleet development at Bognor.

Work Simplification Seminars

TWO SEMINARS have been arranged on 'Work Simplification,' to be addressed by Professor H. F. Goodwin of the Massachusetts Institute of Technology. They are to be held in the Midland Hotel, Birmingham, on November 16 and 17, and at the Washington Hotel, London, W1, on November 20 and 21. The fee will be £26 5s. per person. Full details are available from Industrial Education International Ltd., 66 Chandos-place, London, WC2.

New Main Drainage for Portsmouth

A NEW MAIN DRAINAGE SYSTEM for Portsmouth to cost nearly £4m. was approved in principle by the Corporation's roads, works and drainage committee on September 5. The city engineer, Mr. W. E. C. Chamberlain, recommended that the works should be carried out urgently in view of the fact that some parts of the city were liable to serious flooding, and also because of the development expected within the city and on reclaimed land in Portsmouth Harbour, Portcreek and Langstone Harbour.

Financial and Building Company Formed

IT HAS BEEN ANNOUNCED that the Rodwell Group Ltd., a development company, and Sir Robert McAlpine and Sons Ltd., the contractors, have formed a company called Inner Circle Investments Ltd. Rodwell will own 51 per cent of the shares and the McAlpine family 49 per cent as a private investment. Various development schemes are planned and one has already commenced. It is a 13-storey shop and office development at the corner of Farringdon-road and Cowcross-street known as Cardinal House. The estimated cost is £1m. and the architects are R. Seifert and Partners.

Common Market Discussions

DIRECTORS of the overseas companies and associates of the Production-Engineering Group visited London from September 12 to 16 to discuss 'Operation Common Market.' Countries represented included Australia, Canada, South Africa and various West African and European areas. The Production-Engineering Group has already received more inquiries from European business concerns interested in the likely opportunities of the British market than they have had from British firms looking abroad.

WPRL Open Days

THE WATER POLLUTION RESEARCH LABORATORY, run by the Department of Scientific and Industrial Research at Stevenage, is to hold open days from October 11. At this laboratory extensive investigations are being carried out, mainly into the treatment of sewage and industrial waste and on the effects of pollution on surface waters. The public will also be able to visit the new wing, recently completed by the Ministry of Works.

Ambulance Stations in Hampshire

COMMENTING on the provision of ambulance stations and staff accommodation, Hampshire county health committee said it had been the policy to provide new ambulance stations to replace unsuitable and inadequate accommodation, and six new stations had been erected in the administrative county since 1953. Three more stations are at present in course of construction. In view of the continuous rise in building costs since 1953, and especially during the past year, the report continued, the committee had decided to review their policy of providing new stations in traditional methods of construction, and to investigate the possibility of making other, and less costly arrangements for the garaging of ambulance vehicles.

Prestressed Concrete Railway Bridges

A PAPER was presented on October 3 at the Institution of Civil Engineers by Mr. Frank Turton, assistant engineer (bridges), London Midland Region, British Railways. The paper describes the reconstruction of three bridges carrying the heavily used Stockport-Manchester railway in the City of Manchester. It is thought that they are the largest spans yet built to carry main-line traffic. Each is skew in plan and this was used to advantage in the design. Rubber was used extensively in the principal bearings. Two of the bridges were of precast units assembled and prestressed alongside the site and rolled transversely into position. The third was cast in situ during a temporary closure of the line.

BIM National Conference

A CRITICAL EUROPEAN VIEW of British marketing methods, a frank appraisal of modern industrial relations, the successes and failures of a small firm, problems of a large multi-unit organisation, management training, research, and government policies and industry will be some of the subjects examined and discussed at the sixteenth national conference of the British Institute of Management which opens at Torquay on October 24. On the final day of the conference, October 26, Mr. Robert Appleby, managing director of Black and Decker Ltd., will examine industrial relations; Mr. L. S. Newton, group education officer for Pilkington Brothers Ltd., will speak about 'Management Succession'; Mr. R. L. Wessel, chairman of N. Corah (St. Margaret) Ltd., about 'Presenting Information to Employees'; and Mr. J. H. Kean, director of Joseph Newsome and Sons Ltd., about 'Personal Initiative in the Smaller Firm.' Sir Richard Coppock will be in the chair on this occasion.

Roofing Materials by Rail

A RECENT EXAMPLE of collaboration between British Railways and the building materials manufacturers' industry is seen in the special vehicle designed by the railways to carry roofing materials manufactured by D. Anderson & Son Ltd., the old established Stratford and Bow firm which, incidentally, has supplied a very large area of steel decking to Hinkley Point nuclear power station. Research at BR's experimental department at Derby produced a rail container specially designed for the job of transporting the firm's main products, bitumen roofing felts and dpc's which had proved difficult to handle. As a result of successful tests, a fleet of such containers was delivered to the company, and each container now does two trips a week between the Manchester factory and the central depot in London. Messrs. Anderson are so pleased with the outcome that the service is likely to be extended to cover others of their depots. British Railways are prepared to discuss this 'special needs' service with any manufacturer.

Company News

THE KETTON PORTLAND CEMENT CO. LTD. recommend the payment of a final dividend of 15 per cent (less tax) for the year ended June 30, 1961.

Personal Column

MR. FREDERICK THOMAS JONES, AMIPROD.E., has been appointed a director, and MR. JOHN ARTHUR GRACE, commercial director, of Microcell Ltd. (a subsidiary of BTR Industries Ltd.).

Gliksten Doors Ltd. announce the appointment of MR. J. E. BURGESS as northern sales manager covering the Liverpool and Hull sales offices.

OVERSEAS BUILDING

From Our Own Correspondents

AUSTRALIA (SOUTH).—The Adelaide City Council is to consider a 6¼-acre central redevelopment scheme proposed by Burlington Estates Ltd. of London. It will cost £5m. and include a 450,000 sq. ft. shopping area, a 17-storey office block, central market area at first-floor level, an underground bus station and roof-top parking for nearly 1,000 cars.

AUSTRALIA (WESTERN).—Laporte Titanium Ltd. has awarded to the Bechtel Organisation (Bechtel Pacific Corporation Ltd., Melbourne; Bechtel International Ltd., London) the overall contract for engineering and construction of the titanium oxide plant to be built for them at Bunbury in Western Australia. The plant is designed to produce annually 10,000 tons of titanium oxide pigment for the paint, paper, plastics and associated industries.

SPAIN.—Laporte Chemicals Ltd., a subsidiary of Laporte Industries Ltd., has entered into an agreement with the Spanish company, Peroxidos S.A., to provide technical assistance and advice on the construction of an autoxidation hydrogen peroxide plant near Saragossa. The initial capacity of the plant will be 1,000 tons of hydrogen peroxide annually, subsequently rising to 1,500 tons. These arrangements have been made in conjunction with Foret S.A., of Barcelona, whose connections with Laporte cover a period of nearly 30 years.

Housing in N. Rhodesia

A TOWNSHIP is being developed by Richard Costain (Africa) Ltd., near Lusaka, N. Rhodesia, for African private ownership. A subsidiary of the British South Africa Co. Group has made £100,000 available to finance 90 per cent mortgage loans. The housing will cover 432 acres with 80 houses on ¼ acre, 180 on ¼ acre and 740 on ¼ acre sites. Provision has been made for enlarging the houses later which are being planned in twelve basic types. Areas have been allocated for light industry and community centres.

Coal Handling Equipment

TENDERS WERE CALLED on September 30 for the supply of modern coal-handling equipment to stimulate exports of Australian coal to Japan and other countries. The tenders are part of a £A10m. modernisation programme being undertaken by NSW and the equipment will be installed at Port Kembla.

Overseas Contract Open

PAKISTAN.—The West Pakistan Water and Power Development Authority plans to call for two separate construction tenders on the previously advertised Sidhnai-Mailsi-Bahawal Link Canal instead of a single tender as previously contemplated. One tender will be called for the Sidhnai-Mailsi portion of the canal and a second tender will be called for the Mailsi-Bahawal portion. All contractors who have made previous application and who have been pre-qualified to receive invitations to tender on the Sidhnai-Mailsi-Bahawal Link Canal will be sent invitations to tender on both the Sidhnai-Mailsi Link Canal and the Mailsi-Bahawal Link Canal. No further request or application from such pre-qualified contractors will be necessary. In view of the above change it has been decided that additional contractors not already pre-qualified by the authority will be permitted to submit information of their qualifications for undertaking the proposed construction of the Mailsi-Bahawal Link Canal in application for pre-qualification. The Mailsi-Bahawal canal will have a length of 13 miles. It will require the excavation of about 4.1m. cu. yd. of earth, compaction of 1.7 m. cu. yd. of embankment and the construction of eleven structures such as regulators, bridges and aqueducts. The capacity of the canal will be 3,900 cu. ft. per second and it will be brick lined over most of its length. The authority plans to call for tenders for the construction of the Mailsi-Bahawal Link early in 1962. Only contractors who have been pre-qualified by the authority will be invited to submit. Contractors who wish their names to be included on a list to receive the document for pre-qualification are requested to submit the following information on or before November 15, 1961, to the authority's consultants, Tipton and Kalmbach, Inc., at Post Office Box 589, Lahore, West Pakistan, with a copy to their office at 831 14th-street, Denver 2, Colorado, USA:—Name of company or firm with full address; name and title of person to whom future correspondence should be directed.

SCOTTISH BUILDER

House Siting Disputed

THE SITING of 258 houses in an area which Inverness County Council want to zone for residential purposes was the main point of contention at an inquiry which opened at Inverness on September 25 into proposed alterations and additions to the council's development plan. The inquiry is before Mr. Walter A. Elliott, advocate, appointed by the Secretary of State.

The county council propose to zone several areas within six miles of the burgh environs as housing areas in which an estimated 69 houses will be built within six years. Within 20 years a further 140 houses are expected to be built.

A site of 43 acres at Holme Mains, near the Inverness burgh boundary, has been added to the original proposals. The estimated number of houses for this area is 258, and an application for planning consent to develop it for housing has been received by the council.

Objectors include two proprietors, whose gardens adjoin part of this area. They claim that the council's proposal will be detrimental to the amenity of their property.

Development Scheme for Ayr

THE Planning Committee of Ayr Town Council has given planning approval in principle for a £600,000 development scheme in Alloway-street and Dalblair-road including the demolition of the Hotel Dalblair, which has 40 bedrooms, and the building of a six-storey hotel of 60 bedrooms. There will also be an arcade of about 30 shops, including a supermarket, and offices linking the two streets.

The scheme is expected to be in operation within two years. Approval in principle was given by a majority of 7-4 after much discussion about the problem of car parking in the area. Individual buildings are to be dealt with in turn instead of block approval and the town council will be asked to approve the decision next month. The redevelopment covers an area of 84,000 sq. ft.

The application was made on behalf of Murrayfield Real Estate Company Ltd., who are associated with the Cotton-Clore group.

New Buildings

ABERDEEN.—The corporation town planning committee has approved plans for alterations to the Royal Aberdeen Hospital for Sick Children which include the provision of a new three-storey block. Estimated cost is £200,000.

CROMARTY.—A grant of 75 per cent of the total cost has been offered by the Scottish Home Department to Ross and Cromarty CC for their scheme for strengthening and extending coast protection works along Braigh Bay, Lewis.

DUNFERMLINE. — Caledonia Cinemas Ltd. are said to be interested in acquiring the site of the sheriff court in the High-st. and have submitted a development plan to the TC which involves the demolition of the court buildings.

EDINBURGH.—The Corporation are planning a new store and office block for the lighting and cleansing department at King's Stables-rd. The first contract for in situ concrete piling is now being offered. Applications to City Architect, City-chbrs by Oct. 17.

PERTH.—TC are to extend their swimming pool from 75 to 110 ft. at a cost of £50,000. Approval has been given for the scheme.

RENFREW.—CC are to construct a pumping station at Linwood, and invites experienced firms wishing to tender to submit names to County Engineer, 16 Back Sneddon-st., Paisley.

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THE BUILDER CONSTRUCTION NEWS

Full details of Public Appointments open will be found in the Advertisement pages of this and previous issues.

CONTRACTS OPEN

For some contracts still open but not included in this list, see previous issues. Those preceded by the symbol (A) are advertised in this number. The latest date for the receipt of tenders or applications appears above each paragraph. The symbol (R) preceding each entry indicates that applications must be received by this date.

BUILDING

OCTOBER 9

(AR) WATFORD BC.—Erection of a detached house, and alteration and extensions to Watford First community centre, Clarke-way, Leavesden Green. Wakelin & Herne, architects, 4a St. Albans-rd., Watford.

OCTOBER 11

(AR) LEEDS REGIONAL HOSPITAL BD.—Fixed price tenders for adaptations to labour ward and admission unit at St. John's Hospital, Keighley. A to Bd, Park-parade, Harrogate. Dep. £2 2s.

(AR) LEEDS REGIONAL HOSPITAL BD.—Fixed price tenders for improvements to infirmary block and sanitary accommodation in main block at Castleberg Hospital, Giggleswick. A to Bd. Dep. £2 2s.

(AR) WATFORD BC.—Erection of 12 traditional houses and 12 garages at Upper Highway, Abbots Langley. Boro' E&S.

OCTOBER 12

(AR) SMETHWICK CBC.—Erection of 21 old people's flats at Perry Hill, Oldbury. Boro' E&S. Dep. £2 2s. Tenders by Nov. 6.

OCTOBER 13

(AR) BROMLEY BC.—Erection of 30 houses and 70 flats at Burnt Ash-la. Boro' E.

OCTOBER 14

(AR) ESSEX CC.—(A) Erection of Loughton Hall College of Further Education; (b) additions to clinic at Maldon Heath services clinic; (c) extensions to Laindon CS sch. County A (separate applications).

(AR) SOUTHAMPTON CBC.—Erection of new assembly hall, kitchen, etc., at St. Monica prim. sch. Boro' A. Tenders by Nov. 20.

OCTOBER 16

(A) BROWNHILLS UDC.—Erection of four dwellings and 30 garages at Bradford-rd./Husey-rd. E&S. Dep. £2 2s.

(AR) COALVILLE UDC.—Erection of 66 houses and flats at Greenhill estate. E&S. Dept. £4 4s. Tenders by Nov. 10.

(AR) EAST SUSSEX CC.—Erection of a health services centre at Portslade. County A.

(AR) WEST SUSSEX CC.—(a) New house and garage for district nurse at Pulborough; (b) erection of seven standard houses, one senior police officer's house, and four garages, at Littlehampton. County A (separate applications).

OCTOBER 18

(AR) DURHAM CC.—(a) Electrical installation at Chilton sec. mod. sch.; (b) erection of one pair of police houses, with office, at Hylton-st., Castletown. County A.

(AR) LEEDS REGIONAL Hospital BD.—Fixed price tenders for upgrading of heating and hot water supply services in psychiatric block, St. James's Hospital, Beckett-st., Leeds. Regional E. Dep. £2 2s. Tenders by Nov. 16.

(AR) WANDSWORTH MBC.—Conversion of 46 Thrale-rd. into flats, and erection of a common room at 36/38 Thrale-rd. TC.

(AR) WATFORD BC.—Erection of eight houses at High-rd., Leavesden. Boro' E&S.

(AR) WATFORD BC.—Erection of two houses, eight flats and four garages at Muriel-ave. Boro' E&S.

OCTOBER 20

(AR) NORFOLK CC.—Erection of an old people's home at South Wootton, King's Lynn. County A.

(AR) SOUTH EAST METROPOLITAN REGIONAL HOSPITAL BD.—Erection of outpatients', casualty and x-ray departments and operating theatres at Lewisham Hospital, SE13. Sec. to Bd.

OCTOBER 23

CO. DOWN.—Erection of a new child health clinic and library at Castlewellan, for Health Committee. County Planning Officer, English-st., Downpatrick, Co. Down. Dep. £3.

(A) FINCHLEY BC.—New public convenience at Stanhope-rd., N12. Boro' E&S. Dep. £2.

(AR) SOUTHEND-ON-SEA CBC.—Proposed old people's home at Connaught House, Rochford. Boro' A. Dep. £2.

OCTOBER 24

(A) ROCHESTER CITY C.—Fixed price tenders for the erection of 68 houses at Earl estate. City S. Dep. £3 3s.

OCTOBER 25

(A) BECKENHAM BC.—Erection and completion of additions to a pavilion at Churchfields recreation ground, Churchfields-rd. Boro' E&S. Dep. £2.

OCTOBER 30

(A) KEYNSHAM UDC.—Housing at Broadlands estate. A. Dep. £2 2s.

(A) MID-WALES POLICE AUTH.—Erection of a police house and office accommodation at Broad-st., New Radnor. County A.

OCTOBER 31

(A) SEVENOAKS RDC.—Erection of four aged persons' flats at West End, Kemsing. E&S. Dep. £2 2s.

NOVEMBER 1

CORK.—Rebuilding of the opera house at Emmet-pl., Cork, for Cork Opera House Co. Ltd. P. F. Coveney, 47 South Mall, Cork. Dep. £52 10s.

(A) WARRINGTON CBC. — Alterations and brickwork shop extension as phase 2 of Technical College extension, Long-la., Orford. D. G. MacConville, architect, Bewsey chambers, Bewsey-st., Warrington. Dep. £2 2s.

NOVEMBER 6

(A) FARNBOROUGH UDC.—Erection of three-storey blocks of dwellings, comprising 12 one bed. flats and 12 two bed. maisonettes, etc., at Minley estate. E&S.

(A) MIDDX. CC.—Firm price tenders for 8 sd. houses, 16 terrace houses and one block of 4 flats, with roads and sewers, at Picketts Lock-la., Edmonton, N9. J. D. & D. M. Watson, M/MICE, 67 Tufton-st., Westminster, SW1. Dep. £10 10s.

(A) NORTON-RADSTOCK UDC.—Erection of 32 dwellings at Midsomer Norton. Miles & Wills, architects, 18 Gt. George-st., Bristol 1. Dep. £5

NOVEMBER 7

(A) ROCHESTER CITY C.—Fixed price tenders for the erection of 39 houses, 16 flats, two shops and 54 garages at Warren Wood redevelopment (stage 6). City S. Dep. £3 3s.

(A) RUGBY BC.—Erection of 54 flats, 26 houses and nine bungalows at Abbotts farm estate. Boro' S. Dep. £2 2s.

NOVEMBER 8

(A) ABERDARE UDC.—Erection of nine flats at Penywaun. E&S. Dep. £2 2s.

(A) GOSPORT BC.—Proposed mast store and club room at Lee-on-Solent Sailing Club, Marine Parade East. Boro' E. Dep. £2 2s.

No Date

(A) CHISLEHURST & SIDCUP UDC.—Erection of 54 dwellings at Gattons redevelopment estate North Cray, Kent. E&S. Dep. £3 3s.

SERVICES, PAINTING, MATERIALS, ETC.

OCTOBER 13

(AR) SOUTHEND-ON-SEA CBC.—Fencing and re-erection of existing fencing at Westcliff high schools. Boro' A. Tenders by Nov. 1.

OCTOBER 18

(AR) KINGSTON-UPON-THAMES RBC.—Internal redecorations of first and second floors, etc., at The Guildhall. Boro' S.

(A) TOTTENHAM BC.—Supplying and fixing of Sundeala bording for display purposes at various schools. Boro' E&S.

OCTOBER 30

(A) RIPLEY UDC.—Painting of Council chamber at Town Hall. S.

NO DATE

(A) BIRMINGHAM CITY C.—Supply of r.c. fencing posts. Housing Mgr.

MUNICIPAL AND CIVIL ENGINEERING WORKS, ETC.

OCTOBER 9

(AR) WILTON BC.—Resurfacing of approximately 10,000 yds. of roads at Bulbridge Wilton. Robert Potter & Richard Hare, architects, De Vaux House, Salisbury.

OCTOBER 27

HOWDEN RDC.—Construction of approx. 7,850yd. of 6in., 2,115yd. of 9in. concrete pipe sewers, and 450yd. of 12in. spun-iron and concrete pipe sewers, together with manholes; 1,500yd. of 4in., 685yd. of 5in., 45yd. of 7in. and 4,100 yd. of 8in. asbestos-cement rising main, with six sewage pumping stations, for Newport and Gilberdyke, and sewage treatment works on the Beverley and Howden joint trunk sewer. J. H. Haiste & Ptnrs., engrs., 20 Wood-la., Headingley, Leeds 6. Dep. £3 3s.

NOVEMBER 3

NEWCASTLE - UNDER - LYME RDC.—Construction of about 4,100 lin. yd. of glazed stoneware and spun iron pipe sewers, 6in. and 9in. in dia., with manholes, and a sewage disposal works comprising screening and detritus tanks, storm overflow chamber, sedimentation tanks, dosing chamber and bacteria beds, humus tanks, pumping station, sludge lagoons, pipework, chambers, road, paths and incidental works at Ashley sewerage and sewage disposal works. A. H. S. Waters & Ptnrs., engrs., 25 Temple Row, Birmingham 2. Dep. £5 5s.

NOVEMBER 6

HAVANT AND WATERLOO UDC.—Making-up part of Scratchface-la., approx. 560yd. in length, consisting of the excavation and formation of approx. 3,600 sq. yd. of reinforced concrete carriageway, together with 1,225 lin. yd. of concrete kerb, 1,350 sq. yd. of asphalt paths, 1,650 sq. yd. of grass verges, and the provision of 550 lin. yd. of 12in. dia. surface water sewer, complete with precast concrete manholes, gullies, connections, and ancillary works. E&S.

GENERAL BUILDING WORK (LONDON)

EALING.—Site Acquisition.—A site of 35.04 acres, sufficient for the erection of about 400 dwellings, is to be purchased by

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the LCC, by agreement at a cost (including clearance and partial redevelopment) of £310,000. A small portion of the land, about 2.38 acres, was to have been bought for housing purposes by the Hayes and Harlington UDC but because of difficulties of access it has been agreed provisionally that the LCC should acquire and develop the land and sell at cost to the UDC one-third of the number of dwellings which could be erected on this part of the land at the zoned density. The site is in Yeading-la.

FULHAM.—Housing Development.—The housing committee has submitted to the LCC details of a scheme for Burlington-rd. A 4-storey block of 20 maisonettes, a playground, 11 garages, 5 parking spaces and 10 tenants' stores are to be provided on the 0.7 acre site between Rigault-rd. and Fulham-rd. Architects are C. Lovett Gill & Ptnrs. Est. cost is £61,900 . . . The LCC is to erect 67 flats in a 17-storey block with 2 penthouse flats, 19 houses in 3 terraces, a block of 8 old people's flats, 49 tenants' stores, 46 garages, 20 parking spaces, a playground and a playspace to be provided on a site of just over 3 acres between Pearscroft-rd. and (also extending northwards of) Sandilands-rd. Architects of the project, costing £334,200, are R. Mountford, Pigott & Ptnrs.

GREENWICH.—Aged Persons' Home.—The welfare committee, LCC, propose to erect a home for old people on a site of ¾ acre, already owned by the Council, adjoining Cherry Orchard prim. sch.

HAMMERSMITH.—New School.—LCC education committee has approved plans for a school for 200 educationally sub-normal children at Banim-st. Cost £105,930.

ISLINGTON.—Planning Applications.—The LCC has received the following town planning applications: New housing at Queen Margaret's-gr. (BC); new housing at Unitarian Church, Highgate Hill, Despard-rd. (BC).

ISLINGTON.—New Homes.—The LCC's welfare committee have approved a scheme by Messrs. Lyons, Israel and Ellis (private architects) for a home for old people, estimated to cost £178,060, at Dorinda-st. Partly of four storeys and partly of one storey, it will contain 37 single and 30 double bedrooms. To take advantage of the open outlook to the east and north-east over St. Mary Magdalene Church-gdns., the bedrooms will be on one side of the building only and have been designed to gain morning sunlight. The lifts and main staircase will be at the centre of the building. The estimated cost of construction includes £13,150 for abnormal foundations and site works and £8,515 for outside works.

LAMBETH.—Planning Application.—Oscar Garry & Ptnrs. have forwarded a town planning application to the LCC for residential and commercial development at Albert Embankment (revised application).

LAMBETH. — Rehabilitation. — Nine 3-storey Georgian houses, 282-298 (even), South Lambeth-rd., are to be modernised and converted under a LCC housing committee scheme estimated to cost £27,485, five for occupation by large families and 4 by old people. 18 single-room flatlets for old people will be arranged in threes with a communal kitchen to each group; heating will be by electric panel fires and radiant heaters in bathrooms; cooking and water heating will also be electric. The front gardens of all 9 houses will be laid out as a single grass area.

LEWISHAM.—Planning Application.—The LCC has received a town planning application from the MBC for the erection of 204 flats and 43 garages at Lewisham Park.

LEWISHAM.—Housing.—The MBC housing committee has approved plans for the development of sites of Nos. 1-10 (cons.) Lewisham Park by the erection of 102 two-bedroom and 102 one-bedroom flats in three 18-storey blocks and 43 lock-up garages. The detailed plans and a model of the scheme will be exhibited at the meeting. The committee consider that this site, which forms the whole of the frontage behind the War Memorial gardens in Lewisham High-st., would be developed to the best advantage by tall blocks, well spaced, having in mind the open spaces already existing in front of and at the rear of the site. Certain details are still under consideration by the committee, and it will be necessary to obtain the approval of the Minister of Housing and Local Government and the planning consent of the London County Council.

Contracts Placed

We are glad to receive from architects and quantity surveyors for publication details of contracts placed to the value of £20,000 or over. Such information should reach the Editor as soon as possible after the contract is signed. Names of the architect and other consultants associated should be given.

POPLAR.—Site Acquisition.—The LCC town planning committee recommend the acquisition, by compulsory purchase if necessary, of a site south of Lansbury Market bounded by East India Dock-rd., Kerbey-st., Grundy-st. and railway line east of Chrisp-st., Poplar, comprising six houses (one derelict), nineteen shops, some with living accommodation over, two public houses, a workshop, store, and bank premises. About 16 families will need to be rehoused. The site is needed for comprehensive redevelopment. Cost of acquisition is £340,000.

POPLAR. — Housing Development. — Messrs. Norman & Dawbarn are the architects for a scheme, costing £92,700, just submitted to the LCC by the housing committee. It is for 24 dwellings in two 4-storey maisonette blocks connected by 2 storeys of flats spanning Lansbury Market Way, 2 shops, 6 garages and 12 tenants' stores to be erected on a 0.92 acre site linking Market Way (a narrow shopping street) with new housing at the Alton-st. site.

ST. MARYLEBONE.—Remodelling.—The LCC's ed. com. are to transfer Cosway and Gateforth county primary schools, St. Marylebone, to premises vacated by Regent's Park secondary school. The premises will be brought up to modern standards for a primary school and a new three-storey block will be built. A detached building in the playground will be adapted for use by nursery children. Estimated cost of the work is £62,315.

ST. MARYLEBONE.—Road Widening.—An estimate of £586,500 was submitted by the LCC roads and town planning committees for the acquisition and appropriation of land required for widening of Marylebone-rd. from Park-sq. East to Harewood-av. Compulsory powers may be required. The improvement will provide for six lanes of traffic through Marylebone Road. The Roads Committee will report later on the details of the scheme and on the engineering works which will cost about £370,000.

ST. PANCRAS.—Planning Applications.—The LCC has received the following town planning applications: Shops, showrooms and office on a site bounded by Osnaburgh-st./Euston-rd. / Hampstead-rd. / Drummond-st./Longford-st. (Lewis Soloman, Kaye & Ptnrs.); new automatic car park at Whitfield-st. (Archibald Shaw & Ptnrs.).

SOUTHWARK.—Planning Application.—T. P. Bennett & Son have forwarded a town planning application to the LCC for the erection of a new cinema, with offices over, at The Trocadero, Elephant & Castle.

STEPNEY.—Planning Application.—The LCC has received a town planning application from T. P. Bennett & Son for general development in the London Hospital area.

STOKE NEWINGTON.—New School.—Plans for the erection of a new school for 105 partially-sighted children at Clissold-rd. have been passed by the LCC's education committee. Cost £124,280.

WANDSWORTH.—Planning Applications.—The LCC has received the following town planning applications: Residential blocks, stage 2, of Sutherland-gr. housing scheme (MBC); erection of 40 flats and 24 garages at 80 Victoria-dr. (W. J. Harvey); new block of 30 flats at Wandsworth estate, Garratt-la. (MBC).

WANDSWORTH.—Planning Application.—A new rectory, hostel, houses, flats and garages, are proposed for St. Nicholas Rectory, Rectory-la. A town planning application for the development has been forwarded to the LCC by E. F. Starling.

WANDSWORTH.—New School.—Plans for new buildings and adaptations at North House, a boarding school for the blind, have been passed by the education committee of the LCC. Cost £175,000.

WESTMINSTER.—Planning Application. Lewis Soloman, Kaye & Ptnrs. have forwarded a town planning application to the LCC for the erection of shops, showrooms and offices at Haymarket/St. Alban's-st.

WOOLWICH.—Planning Applications.—The LCC has received the following town planning applications:—Redevelopment for housing, etc., at Co-operative works at Federation-rd./Knee Hill (Eley & Rickord); hostel for overseas students at St. Margaret's Vicarage, Vicarage-rd. (E. F. Starling).

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(PROVINCIAL)

BERKS.—EC propose a new secondary modern RC school in the Maidenhead-Windsor area. . . . EC is to invite tenders this year for a new county grammar school at Bulmershe, £333,735 est.

BILLINGHAM-ON-TEES.—UDC is to submit to the MH&LG a £745,000 scheme for the construction of a sports stadium. The work, if sanctioned, will be carried out over a period of five years. Council's Surveyor is E. Shaw, Council Offices, Haverton Hill-on-Tees.

BLACKPOOL.—Blackpool Rugby League Club Ltd. propose erection of offices and sports stadium at Princess-st. . . . BC propose erection of community centre on 6 acres of land at Brindle Hall, Mereside, Marton, including 60 place residential home for old people, 24 flatlets, 4 bungalows, community hall and 6 almshouses (to be erected by a local trust).

BOLLINGTON (Ches.)—Shrigley Dyers Ltd. propose erection of new offices. . . . UDC is preparing a scheme for the erection of 16 bungalows and are negotiating for land in Church-st. area for residential development.

BOLTON.—Bromilow & Edwards propose extensions to factory at Sidney-st. . . . BC is contemplating approaching neighbouring authorities with reference to overspill housing on slum clearance areas.

BRACKNELL.—CC propose extensions to the Borough Green School. . . . Precision

Built Housing Ltd. propose erection of 30 houses at Manor Side, Winkfield Row. Inquiry held. . . . MoH&LG has confirmed his draft order to proposals to extend Bracknell New Town by 1,080 acres. The additional development will take about 10 years to complete and will raise the population from original target of 25,000 to 40,000, leaving a margin of 14,000 for natural expansion. The extension takes in laid to the south, south-west and west of the town.

BRENTWOOD (Essex).—£150,000 was paid at auction recently by The Ford Motor Co. Ltd. for the old Warley Barracks at Brentwood, Essex, sold by the War Department. The property covers 21½ acres with planning consent for office development, and it is understood that an administrative centre will be built there. This will mean the demolition of old barrack buildings.

BRISTOL.—TC propose new museum and art gallery in the Wine-st. area, £1,500,000 est.

BURGHCLERE (Hants.).—MoT intends authorisation of bridge reconstruction carrying A.34 Winchester-Newbury road over railway at Tothill, near Burghclere, in the financial year 1963/4. Detailed plans being prepared.

BURNHAM-ON-SEA.—UDC is revising plans to build 62 houses at Highbridge and it is hoped that a much greater density will be achieved. It is hoped that the alterations will make it possible to have 72 2-bedroom maisonettes, 30 3-bedroom flats and 15 one-bedroom flats, with the appropriate number of garages instead of 62 houses previously planned.

BURNLEY.—Church of Jesus Christ of Latter Day Saints seeks planning approval for erection of new chapel, with 70 ft. high tower, at Queen's Park-rd. corner. Est. £50,000.

BURY.—Templegate Property Co. Ltd., London, propose erection of offices and shops on site of 'Hand & Shears' hotel, The Rock, after demolition.

BYFLEET.—A new county infants' school at Sanway-rd., Byfleet, behind St. Marys Church, is proposed by Surrey EC.

CARNFORTH.—UDC is considering purchasing Roxy Cinema for use as public hall.

CHADDERTON.—Following for UDC: Erection of 20 old people's flatlets, 7 old people's bungalows, warden's accommodation, laundry and communal facilities, on site bounded by Princess-st./Broadway/Nimble Nook; included in future schemes are the erection of new mortuary, central surveyor's department and town hall extensions.

CHERTSEY.—BC propose a 16-storey point block of 97 flats, 112 maisonettes in linked 4-storey blocks, 16 two-storey terrace houses and 4 one-storey aged persons' homes, between Station-rd. and Crockford Park-rd.

CHESTERFIELD.—BC propose erection of transport depot at Sheffield-rd.

COLNE.—BC propose erection of 94 dwellings at Lob Common.

DARLINGTON.—The EC may obtain fresh tenders for the erection of the Branksome sec. schl., based on revised plans. Tenders received at present are about £33,000 above the estimate. . . . Outline plans have been approved for the erection of a shopping block at Northgate for Ravenseft Properties Ltd. Architects: Fewster and Partners, 22 Conduit-st., London, W1.

DEGANWY.—BC propose erection of additional chalets, paddling pool and cafe, at North end promenade, £20,000 est.

DEVIZES.—Approval has been given to an outline plan by the TC for development of the Caen Hill site, to provide 60 3-bedroomed houses, 30 one-bedroomed flats in 3-storey blocks, 54 2-bedroomed flats and 11 bungalows.

DEVIZES.—Mr. T. G. Coleman proposes to erect 150 houses; Messrs. Orchard & Peer propose 125 houses and Messrs. Reniell & West propose 14 houses—all at Roundhay Park. . . . Lady Anne Cowdray proposes erection of 30 houses at Broadleas; Mr. H. G. Mattock proposes residential development at Jump Farm, Brickley-la., and Mrs. E. H. Waylen residential development at Nursteed.

DURHAM.—It is expected that the scheme for a dry cleaning depot at Neville's Cross, Durham City, for Co-operative Laundries Ltd., Wallsend, will be ready to go to tender within a few weeks. Plans are by the C.W.S. Architects' Dept., 90 Westmorland-rd., Newcastle-on-Tyne. . . . Hammond United Breweries Ltd., Bradford, are planning the erection of shops and flats.

DURHAM.—Plans have been prepared by the County Architect (G. W. Gelson) for the erection of a police station with courts at Peterlee.

ECCLES.—Lancs. EC propose erection of new county sec. school at Peel Green.

ETON.—RDC propose 18 houses and 20 flats at Buffins Field, Hill Farm-rd., Taplow.

GUILDFORD.—Guildford Co-operative Society considering erection of supermarket on the site of the Theatre at North-st.

HARROGATE.—Alfred Neale & Co., London, propose erection of multi-storey flats at Park-pl.

HENLEY.—John McLean & Sons Ltd. propose erection of 49 houses at Hunters Ride. Inquiry held.

HEXHAM.—UDC Surveyor (W. A. Hancocks) has prepared a scheme for the erection of shops on the Priestlands estate. Planning approval is awaited.

HOUGHTON-LE-SPRING.—During 1962, the UDC is to build 114 dwellings to plans by the Surveyor (A. Veitch). . . . I. Berriman Ltd., builders and contractors, Woodlands Joinery Works, Fence Houses, propose housing development at Fence Houses Station, and three- or five-storey flats at Sunderland-st., Houghton-le-Spring. . . . Charles Bell, Sons and Barnes, 4 Green-terr., Sunderland, have submitted proposals, on behalf of the Rev. O. N. Gwilliam, to the planning authorities for housing developments at Glebe Farm. . . . Isaac Berriman Ltd., builders and contractors, Woodlands Joinery Works, Fence Houses, propose shops and supermarket at Chester-rd., Shiney Row.

LIMERICK.—Limerick plans to spend £385,000 on a new technical school, a school of music and a school of commerce.

LLANDUDNO.—BC propose erection of indoor swimming pool, conference hall, floral hall and aquarium.

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LUTON.—Beaumont Securities Ltd. propose new shopping development scheme at 190/202 Marsh-la. Plans by R. Mountford, Pigot and Partners, 3 Cromwell-pl., London, SW7.

LYTHAM ST. ANNES.—Following for BC: Erection of 58 houses during 1962 and a further 220 houses during 1963/66 (55 each year). . . . Lancs. EC propose extensions to sec. sch. at Worsley-rd., Ansdell. . . . Lytham St Annes Property Co. Ltd. propose erection of 32 flats and 32 garages at Seaton-cres., and residential development at Moorland-rd./Shepherd-rd./Fairview-ave./Stratford-rd.

MACCLESFIELD. — Following for BC: Erection of 1,250 Manchester overspill houses at Parkside estate during 1962; 11-storey block of flats at Kendall-rd., Weston estate; 3 shops and 19 dwellings at Turnock-st. redevelopment area.

MACCLESFIELD.—Three acres of land at Park-la., Poynton, has been acquired by the RDC for a civic centre and car park.

MAGHERAFELT (Co. Derry).—RDC has agreed in principle to the heated indoor swimming pool. Est. cost between £50,000 and £80,000.

MAIDENHEAD.—BC propose erection of industrial premises at Reform-rd. for relocation of small industries, £50,000 est.

MANCHESTER.—Sidney Hillman (Whitworth-st. estates) proposes erection of a 31-storey office block, restaurant, shops and parking facilities at Major-st. . . . Howe & Brother (Dundee) Ltd. propose erection of offices and warehouse at Stock-st., Cheetham. . . . Muldivo Calculating Machine Co. Ltd. propose erection of 3-storey offices and workshop at Gt. Ducie-st., Strangeways.

MIDDLESBROUGH.—Premier Dwellings Ltd., builders, Albert-rd., Middlesbrough, has received planning permission for 78 bungalows at Acklam-rd. . . . A public inquiry has been held into a plan by Ceres Investments Ltd., London, to erect shops and flats on the site of the Regent Cinema, Parliament-rd., Middlesbrough. More than 50 shopkeepers are opposing the scheme. The architects are S. John Hill and Partners, 2, Whitfield-st., Gloucester.

NEWCASTLE-ON-TYNE.—The city planning committee have approved in principle a scheme for the erection of three blocks of luxury flats overlooking Jesmond Dene. The promoters are the building firm of John T. Bell & Sons, Market-st. Chambers, Newcastle-on-Tyne. The scheme provides for between 270 and 300 dwellings ranging in price from £2,800 to £6,000. The blocks will be six, eight and 18-storeys high.

NEWPORT (Mon.).—The housing committee has approved the building of a multi-storey block of flats, up to 12-storeys high on their Ringland housing estate. The flats will be single or double bedroom units for childless families or couples with grown-up children.

NEWPORT PAGNELL.—Central Land Investments Ltd. propose shops and flats at St. Johns-st. Architects: G. B. Cooper & Farquhar, 44 Devonshire-st., London, W1.

NORHAM (Northumberland).—Relay Construction Ltd., builders and contractors, West Monkseaton, Whitley Bay, are seeking permission to construct a motel at Scremerston.

NORTH RIDING.—EC's 1962-63 building programme will include the erection of youth club annexes at the Eastfield, Scarborough; Nunthorpe; and Thornaby Grange county modern schools.

PORTSMOUTH.—City Council propose: A 6-storey block of 54 flats on the corner of Green-rd./Elm-gr., est. £199,000; to demolistion of 129 dwellings in area bounded by Hyde Park-rd., Gloucester, Cambridge, Henrietta and Warwick-streets, and build 204 dwellings on the site in multi-storey blocks of flats and small blocks, each of 4 houses. Health & housing committee has approved the making of necessary clearance and compulsory purchase orders; and to build two blocks of flats on the Upper Arundel-st. site next year.

READING.—Alterations are proposed by BC to premises at 28 College-rd. to form adult education centre. . . . EC to prepare working drawings for Alfred Sutton sec. girls' sch., £281,615 est.

REDCAR.—TC is in touch with a London firm, whose name has not been disclosed,

who are interested in establishing a bowling alley at Redcar to cost £100,000. The site selected is at Coatham, Redcar.

RICHMOND.—Avenue Engraving Co. Ltd. propose extensions to factory at St. Georges-rd.

SANDHURST.—PC propose erection of new village hall.

SHEFFIELD.—Town & City Properties Ltd., London, propose erection of hotel and shops at Cambridge-st.

SLOUGH.—Hazel, Watson & Viney Ltd. propose extensions at Leigh-rd. industrial estate.

SLOUGH.—Kenold Ltd., 2 Burtons-rd., Hampton Hill, Middlesex, proposes erection of 34 houses, 6 maisonettes and 43 garages at Patricia-cl.

SOUTHAMPTON.—Commercial Developments (Southampton) Ltd., High-st., Southampton, plan the erection of an eight-storey car park with accommodation for 400 cars and a 'no-traffic' shopping precinct of 30 shops, est. £150,000, on a site off St. Mary's-st., Six Dials End.

SOUTHAMPTON.—BC's education committee has approved sketch plans for the new Bellemoor sec. boys' sch., est. £245,893.

STOCKPORT.—BC approved in principle, residential development on 20 acres of land at Old Farm, Marple-rd., Offerton.

STOCKTON.—The plans committee has approved an outline application for two blocks of multi-storey flats to be erected behind the TA centre in South-rd., Norton. They will be built by Premier Dwellings (Cleveland) Ltd. of Albert-rd., Middlesbrough. . . . Plans committee also passed an outline application for the erection of a four-storey building comprising shops and offices or bank and offices at the junction of Bridge-rd. and Park-ter., Stockton. Plans were submitted by Tees Land Investment Co. Ltd.

STOCKTON-ON-TEES.—Tasker & Ptnrs., 25 New Bridge-st., Newcastle-on-Tyne, are the architects for proposed shops and maisonettes on the Hardwick estate, Stockton, for Broughs Ltd., provision merchants, etc., Oxford-st., Newcastle-on-Tyne.

STOKE-ON-TRENT.—Shop Development Group of Companies, London, propose erection of supermarket, shops and offices at Old Hall-st., Hanley.

SWANAGE.—Mr. Stanley Collins proposes to build a cinema on a site near the Town Hall. UDC is to recommend approval.

SWINTON & PENDLEBURY.—Following for Lancs. EC: Extensions to Clifton county junior sch.; extensions to Stamford Institute, Pendlebury, to form youth centre.

TURTON.—Ministry approval sought by UDC for erection of 26 aged persons' bungalows, communal facilities, warden's accommodation and laundry at Toppings, £44,000 est.

TYLDESLEY.—Following for UDC: Erection of 60 dwellings to cover slum clearance plans; considering, with London Finance Co., plans for redevelopment of town centre.

WEYBRIDGE.—RC Auth. propose reconstruction of the Church of St. Charles Borromeo, Heath-rd., £64,000 est.

WHICKHAM (Co. Durham).—UDC is to seek Government permission to go ahead with the erection of swimming baths at Dunston. Council's architects are Fennell & Baddiley, Bridge End-chbrs., Chester-le-Street, Co. Durham.

WINSFORD.—Sir James Farmer Norton & Co. Ltd., Manchester, propose erection of engineering factory on industrial estate.

YEOVIL.—Plans for the comprehensive development of about 1½ acres in the centre of the town are to be sent to the MH&LG by the City's planning authority. The area is bounded by King George-st./South st./Hendford and High-st.

TENDERS

(A) Denotes *accepted.*
(PA) Denotes *provisionally accepted.*
(RA) Denotes *recommended for acceptance.*
(AM) Denotes *accepted subject to modification.*
(GD) Denotes *accepted subject to approval by appropriate Government Department.*

ALTON.—Erection of 16 flats, 60 houses and 16 bungalows for UDC. (A) Gregory Housing Ltd., Worthing.

AMBLE.—Erection of 38 'Homeville' houses and bungalows at Links estate for UDC. (A) R. Carse & Sons Ltd., Amble.

AYLESBURY.—Factory reconstruction for the Nestle Co. Ltd. Architects: Beard, Bennett, Wilkins & Ptnrs. (A) Y. J. Lovell (Bucks.) Ltd., £258,850. Factory and office premises for BC. Designed by Boro' A. (A) Y. J. Lovell (Bucks) Ltd., £125,833.

BOLDON (Co. Durham).—Erection of 69 houses on Mill Farm estate, Whitburn, for UDC. (A) W. D. & R. Allison & Son, North Guards, Whitburn.

BRISTOL.—Erection of new maternity clinic at Bristol Maternity Hospital for the Board of Governors. (A) W. H. Harper (Bristol) Ltd., 25 Chandos-rd., Bristol.

COWFOLD.—Additions and alterations to CoE sch. for the Chichester Diocesan Fund & Board of Finance Incorp. Architect: S. H. J. Roth. (A) Y. J. Lovell (Sussex) Ltd., £24,932.

DERBY.—New workshops, offices and petrol-filling station at St. Helen's-st. for The Universal Car Co. (Derby) Ltd. Architects: T. H. Thorpe & Ptnrs. (A) Ford & Weston Ltd., £85,000 (approx.).

DIDCOT.—Extensions to school premises for Berks CC. (A) F. J. Minns & Co. Ltd., Oxford.

EASINGTON (Co. Durham).—Erection of 19 houses at High Hesleden for RDC. Surveyor is R. Lumsden. (A) Direct labour, £30,220 (in lieu of tender of W. M. Glass Ltd., withdrawn).

EPPING & ONGAR.—Erection of 14 'Homeville' dwellings at Blackmore for RDC. (A) Coward Contractors Ltd., Chelmsford.

FARNWORTH (Lancs.).—Erection of two blocks of houses, and garages, at Hearper-st. (A) J. G. Holland, Bolton, £25,000.

HEBBURN-ON-TYNE.—Erection of storage building of about 62,000 sq. ft. at works of A. Reyrolle and Co. Ltd. Architects: Cackett, Burns Dick and McKellar, 21 Ellison-pl., Newcastle-on-Tyne. (A) Sir Robert McAlpine and Sons, Ltd., 81 Jesmond-rd., Newcastle-on-Tyne.

HORSHAM.—Additions and alterations to Trafalgar sch. for West Sussex CC. Architect: O. Evans Palmer. (A) Y. J. Lovell (Sussex) Ltd., £25,274.

(GD) LONDON (Air Ministry).—Contracts to the value of £4,000 or over for week ended September 29: *Building work:* Ringstead, Dorset; Dudley Coles Ltd., Plymouth, Devon. Newton, Notts; Henry James (Mansfield) Ltd., Mansfield, Notts. Collafirth, Shetlands; R. Pert & Sons Ltd., Montrose, Angus. *Artificers' work:* Buchan (Aberdeenshire) etc.; James Cran, Peterhead, Aberdeenshire. West Freugh, Stranraer, Wigtownshire; J. Brown & Son (Building Contractors) Ltd., Stranraer, Wigtownshire. Sopley (Hants) etc.; Willcocks & Stephens Ltd.; Paignton, Devon. *Painting work:* Gaydon, Warwicks.; Quick Bros. (Newport) Ltd., Hallen, Bristol. *High pressure hot water central heating plant (supply and installation):* Upper Heyford, Oxford; Brightside Heating & Engineering Co. Ltd., Birmingham 3. *Installation of high pressure hot water mains etc.:* Fylingdales, Yorks.; Z. D. Berry & Sons Ltd., Westminster, London, SW1.

LONDON (Battersea). — Improvements, major repairs and redecorations to Battersea Institute and Lavender Hill CS sch. for LCC.

E. J. Lacy & Co. Ltd.	£53,821
Galbraith Bros. Ltd.	52,508
R. H. Lynn & Co. Ltd.	48,009
(A) H. T. Oliver & Sons Ltd. ...	41,979

Architect's comparable estimate is £37,321.

LONDON (Bermondsey, Deptford).—Erection at Eugenia-rd. site of 16 terrace houses, with garages, etc., for LCC.

Henry Kent (Builders) Ltd.	£70,344
W. J. Simms, Sons & Cooke Ltd. ...	70,141
M. J. Gleeson (Contractors) Ltd. ...	69,636
Rowley Bros. Ltd.	69,434
Gray, Conoley & Co. Ltd.	69,120
T. R. Roberts (Builders) Ltd. ...	66,648
Kirk & Kirk Ltd.	66,370
Prestige & Co. Ltd.	63,996
A. T. Rowley (London) Ltd.	61,842
(A) Thomas McInerney & Sons Ltd.	61,700

Architect's comparable estimate is £59,518.

LONDON (Bethnal Green).—Erection of 72 flats, six dwellings for old people, nine terrace houses and 40 maisonettes, etc., at Newling-st. site for LCC.

W. J. Simms, Sons, & Cooke Ltd. ...	£373,867
Wilson Lovatt & Sons Ltd.	369,421
The Unit Construction Co. Ltd. ...	367,920
Kirk & Kirk Ltd.	365,796
M. J. Gleeson (Contractors) Ltd. ...	362,980
A. T. Rowley (London) Ltd. ...	362,254
Griggs & Son Ltd.	361,453
Tersons, Ltd.	358,680
Rush & Tompkins Ltd.	358,103
(A) Rowley Bros. Ltd.	350,858

Architect's comparable estimate is £329,076.

LONDON (Camberwell).—Laying out of land at Hunts Slip-rd. as a playing field for Mary Datchelor girls' sch. for LCC.

St. Mary's (Contractors) Ltd. ...	£33,289
A. Stevens Senior	33,054
Edward Gait Construction Ltd. ...	32,996
Turfsoil Ltd.	32,258
(A) Kinman (Contractors) Ltd. ...	30,962

Comparable estimate of chief officer of parks department is £37,500.

LONDON (Camberwell).—New kitchen and hall at Brunswick Park county prim. sch. for LCC.

Thomas & Edge Ltd.	£29,050
William Willett (Contractors) Ltd. ...	28,722
Yeomans & Partners, Ltd.	28,590
C. P. Roberts & Co. Ltd.	27,532
Norman, Wright (Builders) Ltd. ...	23,700
(A) F. H. Beeching & Son (Keston) Ltd.	22,454

Appointed architects' comparable estimate is £22,150.

LONDON (City).—Erection of a seven storey office block in Moorgate for Winmor Properties. Architects: S. M. Haines. (A) Griggs & Son, £3,140.

LONDON (Holborn, St. Pancras, St. Marylebone).—Improvement of intersection of St. Giles Circus for LCC.

Chafen and Newman Piling Ltd	£35,621
Fitzpatrick and Son (Contractors) Ltd.	31,950
(A) Mowlem (Civil Engineering) Ltd.	27,136

Chief engineer's comparable estimate is £27,500.

LONDON (Islington).—Provision of piled foundations for new buildings at Northern Polytechnic, for LCC's Ed. Com.

The Cementation Co. Ltd.	£32,412
McKinney Foundations Ltd.... ...	29,428
(A) Soil Mechanics Ltd.	25,262

Architect's preliminary estimate was £19,300.

LONDON (Islington).—Erection of 86 flats, eight two-storey terrace houses, 68 maisonettes, eight flats for old people, 34 tenants' stores, 22 garages, etc. at Camden-rd. site for LCC.

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The Demolition & Construction Co. Ltd. 539,150
M. J. Gleeson (Contractors) Ltd. 532,980
Griggs & Son Ltd. 530,843
W. J. Simms, Sons & Cooke Ltd. ... 526,617
Rush & Tompkins Ltd. 517,544
A. T. Rowley (London) Ltd. ... 495,621
Kirk & Kirk Ltd. 494,121
Tersons Ltd. 493,987
(A) Rowley Bros. Ltd. 489,598
Architect's comparable estimate is £494,286.

LONDON CC (Middx.).—Laying out of education field at Warren Farm, Southall, for Ed. Com.
The En-Tout-Cas Co. Ltd. £83,595
Bradshaw Bros. (Contractors) Ltd.... 78,182
St. Mary's (Contractors) Ltd. ... 74,345
Kinman (Contractors) Ltd. 72,197
A. J. Ward & Sons Ltd. 68,884
(A) E. Doe & Sons (Contractors) Ltd. 66,142
Comparable estimate of the chief officer of the parks department is £81,300.

LONDON (Paddington).—Construction of gymnasium and other improvements at North Paddington county sec. sch., Amberley, for LCC.
Walter Llewellyn & Sons Ltd. ... £44,781
E. J. Lacy & Co. Ltd. 43,721
Thomas McInerney & Sons Ltd. ... 43,670
William Willett (Contractors) Ltd. 42,864
W. J. Marston & Son Ltd. 42,304
William Walkerdine Ltd. ... ... } 41,179
(A) Griggs & Son Ltd. ... ... }
Comparable estimate of Messrs. Hammett & Norton, the appointed architects, is £39,200.

LONDON (Shoreditch & Finsbury).—New hall of residence for Northampton College of Advanced Technology and a new technical College in Finsbury, for LCC.
Y. J. Lovell (London) Ltd. ... £1,174,598
Trollope & Colls Ltd. 1,146,900
Dove Bros. Ltd. 1,131,751
Patman & Fotheringham Ltd. ... 1,118,711
Walter Lawrence & Son Ltd. ...1,077,586
Leslie & Co. Ltd. 1,038,947
(A) M. J. Gleeson (Contractors) Ltd. 1,006,884
Architect's comparable estimate is £984,198.

LONDON (Wandsworth).—Erection of new day special school at Roehampton, for Ed. Com., LCC.
(A) Ellis Berg Contractors Ltd. ... £63,408
H. T. Oliver & Sons Ltd. 58,165
W. J. Marston & Son Ltd. 56,775
Henry Kent (Builders) Ltd. 56,260
Siggs & Chapman Ltd. 56,000
M. Howard (Mitcham) Ltd. ... 54,700
G. Ward (Ealing) Ltd. 50,455
J. & J. Dean (Contracts) Ltd. ... 50,254
Comparable estimate of the appointed architects, Messrs. James Cubitt & Partners, is £51,800.

MAGHULL.—Shopping centre for Ravenseft Properties Ltd. (A) Holland & Hannen and Cubitts (North West) Ltd.

MORPETH.—Additions to Chantry county secondary school for Northumberland CC. County Architect is C. C. Brown, 30 Great North-rd., Newcastle-on-Tyne. (A) R. Anderson Ltd., Stanmore-rd., Newcastle-on-Tyne, £63,000.

NORTHERN IRELAND.—Erection of a 150-bed hospital at Dungannon for Hospitals Authority. (A) F. B. McKee & Co. Ltd., 9 Shore-rd., Belfast, £750,000.

NORTHUMBERLAND.—Erection of a sec. sch. at Lemington for CC. (A) R. W. Bell and Co. Ltd., Mistletoe-rd., Jesmond, Newcastle-on-Tyne, £178,057.

OXFORD.—Block of shops and offices at Banbury-rd. for Oxford Committee for Famine Relief. (A) Hinkins and Frewin Ltd., Oxford. New offices, showroom and warehouse at Paradise-st. for G. B. Cooper (Oxford) Ltd. (A) T. H. Kimgerlee & Sons Ltd., Oxford.

SHEFFIELD.—Offices and factory premises at Allen-st., for Wm. Skidmore & Co. Ltd. (A) J. W. Sivil Ltd. New office block at Rutland-rd. for Stanley Works (Gt. Britain) Ltd. (A) George Longden & Son Ltd.

STOCKTON-ON-TEES.—Erection of shops and store at Bishop-st. for Messrs. Maddox Ltd., Silver-st., Stockport. (A) Charles Tennet Ltd., Church-rd., Stockton-on-Tees.

STRETFORD.—2nd phase of extensions at Technical College, Talbot-rd. for Lancs. EC. (A) Robt. Carlyle & Co. Ltd., £127,255.

WALLINGTON.—Erection of new Court House for Surrey CC. (A) Grace and Marsh Ltd., New Bridge Works, Waldon, Surrey, £135,000 (approx.).

WALTON-LE-DALE.—New sewage disposal works for UDC. Const. engrs.: Charles J. Lomax & Son. (A) R. T. Haley & Co. Ltd., Yorks., £317,700.

WATFORD.—Erection of Rosary Priory sec. sch. Architect: Wallace J. Gregory. (A) Charles Brightman & Son Ltd., £75,740.

WEST BROMWICH.—Erection of a nine-storey block of flats at Hallam-st., St. Clements-la., for CBC. Architects: Wates Ltd. (A) Wates Ltd., £88,922.

WESTMINSTER.—Six-storey development, comprising car park, offices and flats, at Gt. Pulteney-st., W1. Architect: Cubitt Nichols. (A) Wates Ltd.

WHITLEY BAY.—Erection of new county grammar school for Northumberland CC. County Architect is C. C. Brown, 30 Great North-rd., Newcastle-on-Tyne. (A) Gilbert Ash Ltd., London, £400,000.

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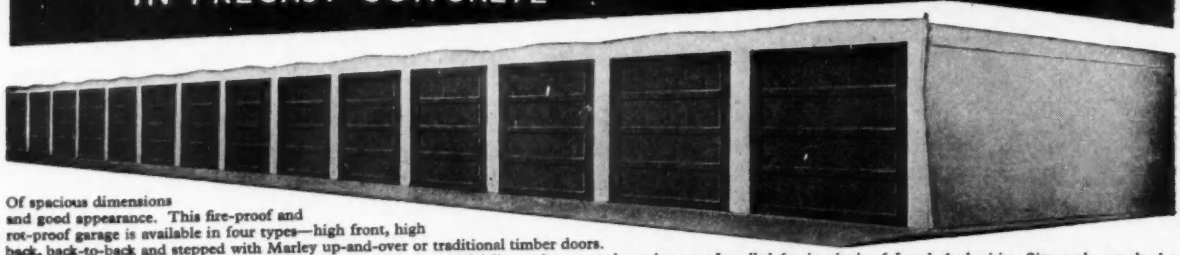

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